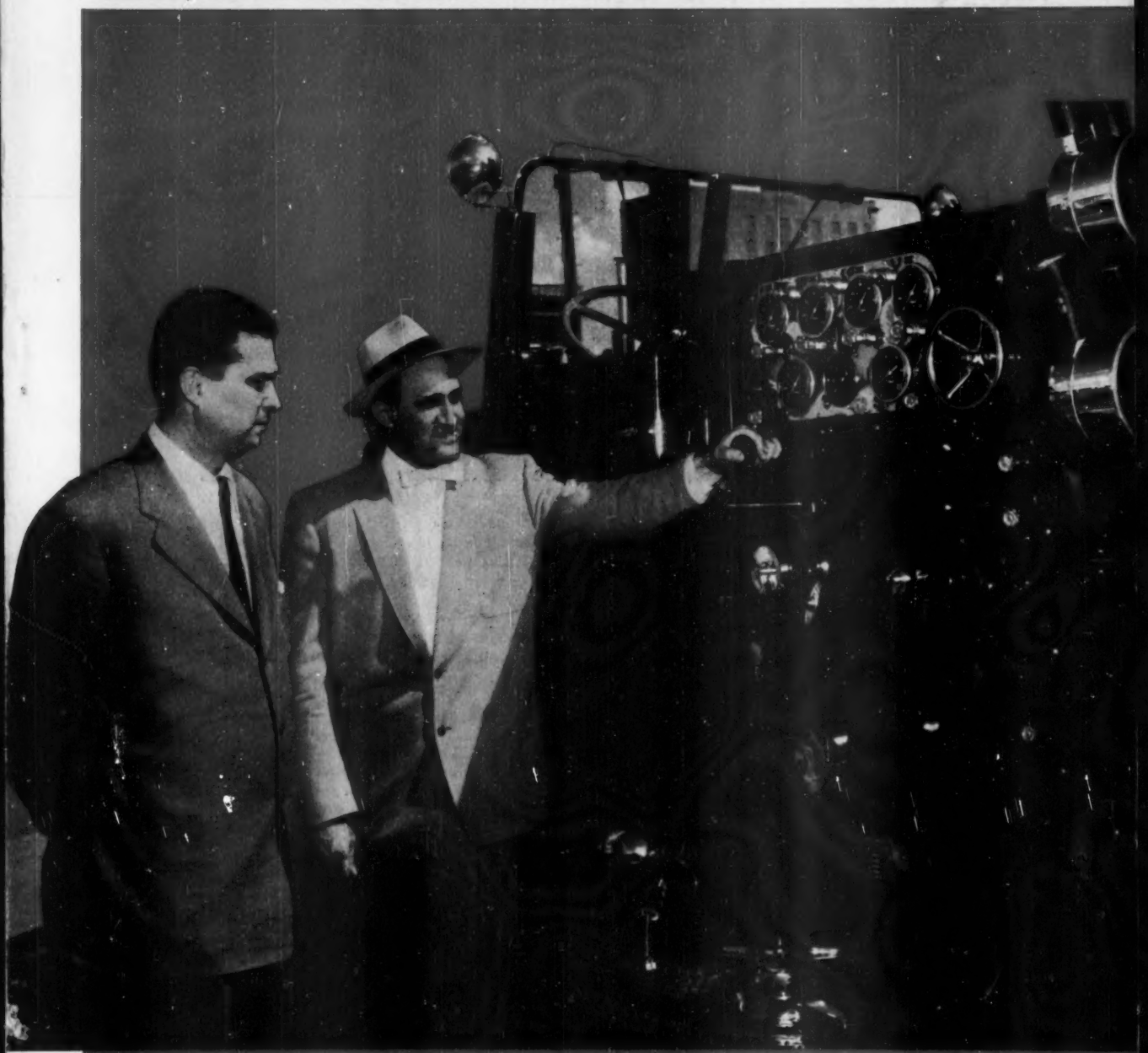
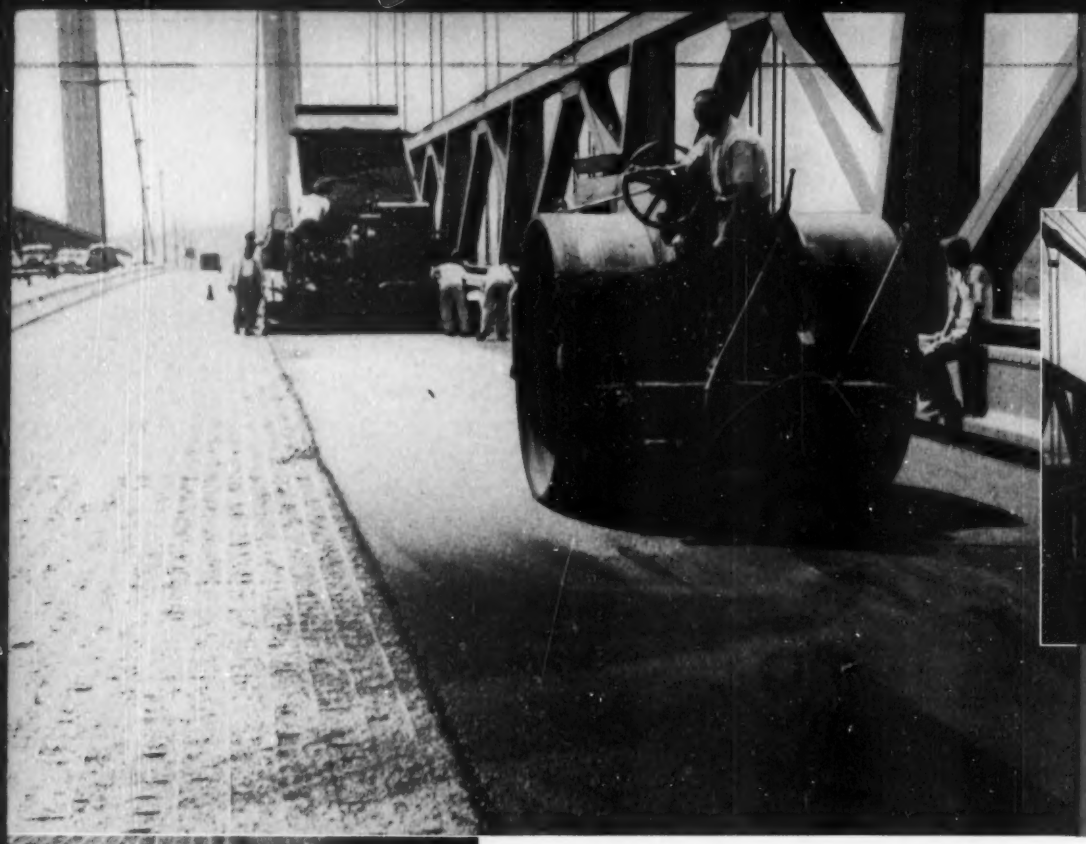
The American City

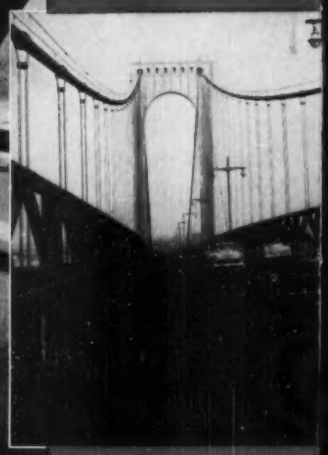
OCTOBER 1954



Mayor Roy Hofheinz and Fire Chief J. W. Lobue readying Houston's newest pumping engine for the 81st convention of the International Association of Fire Chiefs. See story on pages 91–92.



Laying hot-mix Texaco Asphaltic Concrete pavement on New York City's Bronx-Whitestone Bridge, which is under jurisdiction of Triborough Bridge & Tunnel Authority.



Asphalt contractor — Standard Bitulithic Company, Mount Vernon, N.Y.

Asphalt consultant for Triborough Bridge & Tunnel Authority — E. D. Sabin

Close-up of exposed steel grid in bridge floor and the new Texaco Asphaltic Concrete wearing surface.

Spreading seal coat of asphalt-treated stone dust while the asphalt pavement was being rolled.

Traffic will average 75,000 vehicles a day on this resilient Texaco Asphalt pavement

The Bronx-Whitestone Bridge links two of New York City's five boroughs, Bronx and Queens. More than 23,800,000 vehicles crossed the bridge last year, a daily average of 65,000, with a 24-hour peak of 114,000 cars and trucks.

During July of this year, a hot-mix Texaco Asphaltic Concrete wearing surface was constructed on this bridge. Careful planning of working hours resulted in a minimum of inconvenience to traffic. Prior to laying the new asphalt surface, the existing pavement was chipped off down to the steel grid in the bridge floor, as shown by the photos. The resilient asphaltic concrete surface was then laid to a compacted thickness of 1½ inches.

It was essential that the new pavement be opened to traffic immediately after it had been rolled. Application of a seal coat of asphalt-coated stone dust during the rolling operation eliminated any tackiness.

The answer to your own paving problem may be a heavy-duty pavement of the hot-mix Texaco Asphaltic Concrete type, or it may be one of the low-cost Texaco Asphalt surfaces designed for secondary roads and streets. Texaco Asphalt Cements, Cutback Asphalts and Slow-Curing Asphaltic Oils offer the road builder a variety of answers to the paving problem. Helpful information regarding all of these types is supplied in two booklets which you can obtain without obligation by writing our nearest office.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Minneapolis 3 Philadelphia 2 Richmond 19

TEXACO

REG. T. M.

TEXACO ASPHALT

OCTOBER 1954

The American City

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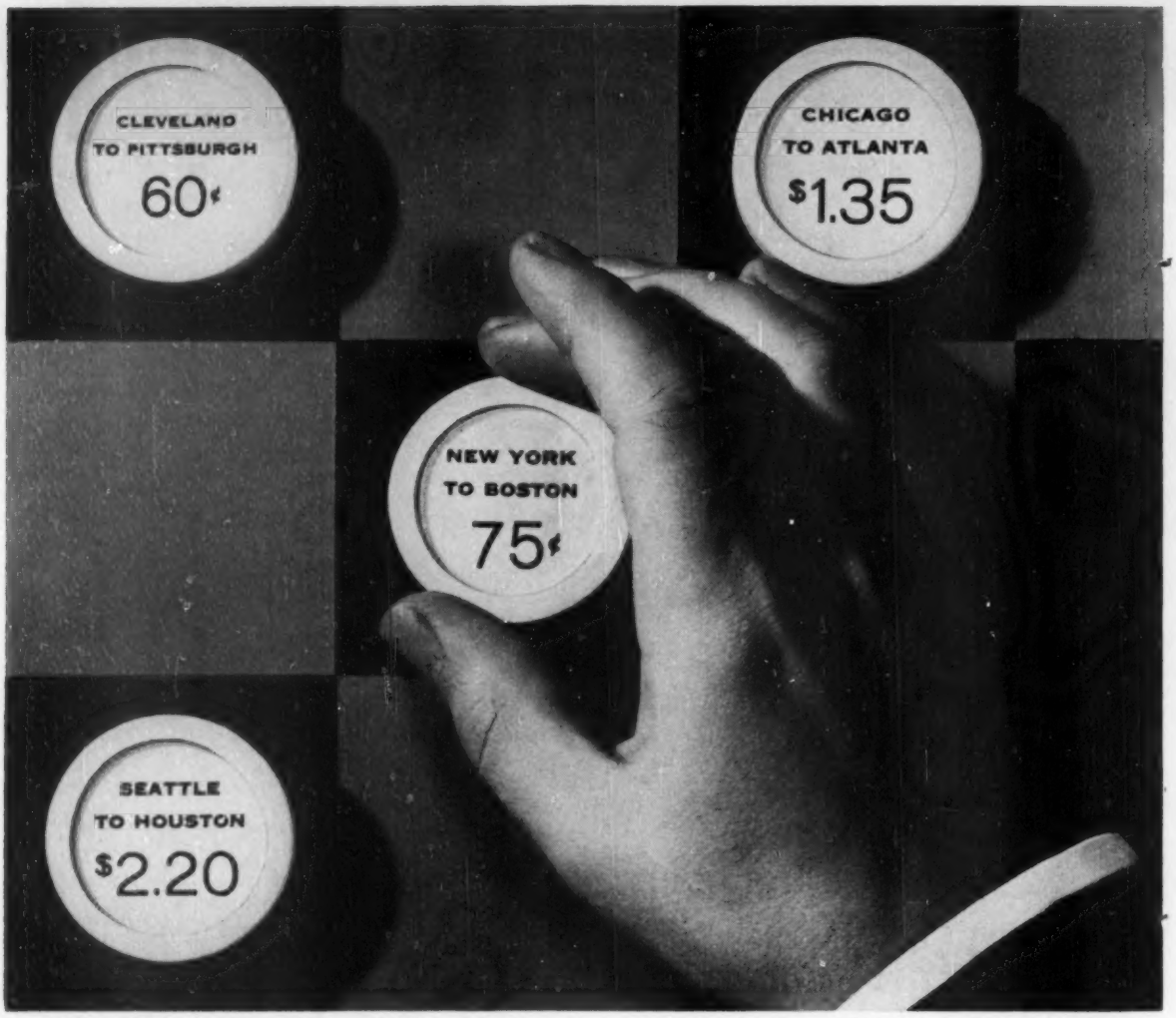

Long Distance Rates Are Low. These are the *daytime* Station-to-Station rates for the first three minutes. They do not include the federal excise tax. Long Distance rates are even lower after 6 o'clock every night and all day Sunday.

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LONG DISTANCE

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Long Distance quickly puts you in touch with just about anyone, anywhere.

It eliminates "hit-or-miss" sales trips by arranging appointments in advance. Helps you keep in regular touch with out-of-town customers. Clears up questions and complaints. Simplifies buying. Speeds deliveries.

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To get more things done, more quickly, reach for the telephone.

Long Distance Doesn't Cost—It *Pays*

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BELL TELEPHONE SYSTEM

Public Safety

What Besides Money for the Fire Department?

By CHARLES N. CARRELL, *Fire Chief, Santa Monica, Calif.*

WHAT are the problems of fire department administration that affect municipal legislators? How can we tell how the fire department's doing? It's a business which has no competition. The fire department with the most and shiniest apparatus and whose members seem to be the busiest may be poorly rated. Many departments whose members seem to be loafing most of the time (at least accused of it by some) enjoy high ratings. Your local department may be in a rut.

In appraising fire defenses, 5,000 points of deficiency are apportioned by the National Board of Fire Underwriters in seven categories, as follows:

Water Supply	1,700 points or 34%
Fire Department	1,500 points or 30%
Fire Alarm	550 points or 11%
Police	50 points or 1%
Building Laws	200 points or 4%
Fire Prevention	300 points or 6%
Structural Conditions	700 points or 14%

A city is graded from 1 to 10, depending on the number of these deficiency points scored against it. A city with no defenses at all would, of course, be placed in class 10 and, as improvements are made, graduated upward toward number one in multiples of 500. A great many cities are in grades ranging from 3 to 6. Few are poorer and fewer are better.

I would respectfully suggest that you obtain a copy of the survey report of your city and discuss it with your manager, fire chief and other department heads concerned. You will find it brief and informative.

If you don't already know, you will find that fire protection is costly. It must be paid for either by providing a high class fire-defense system with resultant low insurance rates or by a poorer system with proportionately higher insurance rates.

Good fire departments cost about $6.50 per capita. You will find the fire department second or third only to the police department and public works agency of your city. Public safety represents the bulk of municipal costs and was the original responsibility of local government.

The first thing a reasonable citizen wants in his "pursuit of happiness" is safety for himself and members of his family—in school, in a rest home or hospital, in theaters, and in bed at night.

About 90% of the cost of a paid fire department is for personnel. There is no substitute for manpower in the fire department. The need for fast action in laying hose lines, advancing hose streams to the seat of the fire, performing ladder work in connection with rescue and ventilation, spreading salvage covers and removing water from buildings requires about 1.50 strong men per 1,000 population.

Keep the fire department free of politics. Separate yourselves as public officials from members of the department as city employees. You will be respected by even the fairweather politician if you discourage local political activity at every opportunity and at the earliest possible moment in your councilmanic career.

Planning

Smaller cities are handicapped in purchasing equipment because of the smaller quantities required and the lack of a specialized purchasing official to prepare detailed up-to-date specifications. Hose will not be bought in large quantities; apparatus may have to be accepted at a higher price than demanded from larger buyers who purchase several pieces at a time and who can stimulate competitive bidding. It is often difficult for smaller communities to set up a routine replace-

(Continued on page 11)

THE AMERICAN CITY

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Cleveland 14 • 603 The Arcade • Robert C. Burton
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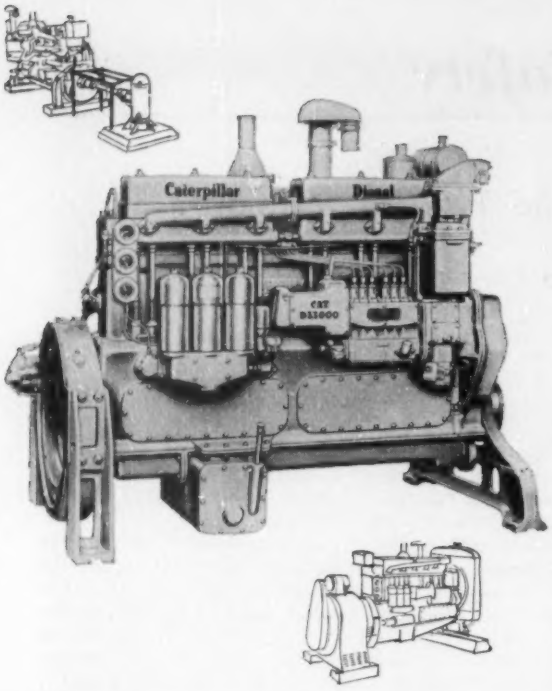
VOLUME 69, NUMBER 10

THE AMERICAN CITY is issued monthly by THE AMERICAN CITY MAGAZINE CORPORATION. Subscription $4 per annum in any part of the world. Single copies, 50 cents. Back copies, $1. Entered as second-class matter, July 20, 1910, at the Post Office at New York, N. Y., under Act of March 3, 1879. Printed in the U. S. A. THE AMERICAN CITY is indexed regularly by Engineering Index, Inc., and the Readers Guide to Periodical Literature.



Announcing the

NEW 190-HP CAT* D13000 ENGINE

CATERPILLAR ADVANCED DESIGN FEATURES IN THE NEW D13000

While retaining such time-proved features as aluminum alloy main and connecting rod bearings, "Hi-Electro" hardened and Superfinished bearing surfaces, exclusive Caterpillar fuel injection system, ability to use low-cost No. 2 furnace oil without fouling, etc., the new D13000 incorporates many new features, among them:

NEW Valves, Inserts, Rotators—new components, standard in the breathing system, combine increased breathing ability with longer valve life—make possible additional horsepower output and lower maintenance costs.

NEW Vibration Damper—sturdy, metal-enclosed, fastened directly to front of crankshaft. Keeps unit vibration-free at higher speeds. Optional in installations where engine speed is kept below 1000 r.p.m.

NEW Camshaft—improved high lift cam profiles give smooth valve seating and increased breathing ability. This increased capacity, also made possible by new oil-bath air cleaner and larger intake and exhaust manifolds, insures low exhaust temperatures and adequate reserve power.

NEW Water Pump—larger, with a greatly increased capacity to answer cooling needs of this modern, high-powered diesel.

NEW Pistons—oil-cooled, made of high-strength, lightweight aluminum alloy with stainless-steel heat plugs in the high-temperature zone and cast-in iron bands for the top ring groove to give best service at lowest final cost.

NEW Oil Pump—features not just one, but two pressure controls to assure correct lubrication for all moving parts from the first turn of the crankshaft.

For complete details, specifications, attachments, etc., see your nearby Caterpillar Dealer

...yours for greater power, protection, tax savings!

For years, in many towns and cities, the Caterpillar D13000 Engine has proved itself a dependable source of main or standby power for water pumping, lighting and other municipal needs. Now comes a new D13000, designed and built to bring you even greater power, protection and economical operation!

In the new D13000 you get 21% more horsepower. Its governed speed, raised to 1200 r.p.m, provides increased versatility. While keeping outstanding time-tested parts, it adds advanced design features to set new standards for dependability, economy and long life. And its wide variety of matched accessories and attachments makes it readily adaptable to almost any need.

For uses requiring power in the 145 (continuous) to 190 (intermittent) horsepower range, your best buy is this rugged new Cat D13000 Engine. The new Caterpillar D13000 Electric Set, self-regulated or externally-regulated, generates 100 KW.

Get the *complete* facts about these new units from your nearby Caterpillar Dealer.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

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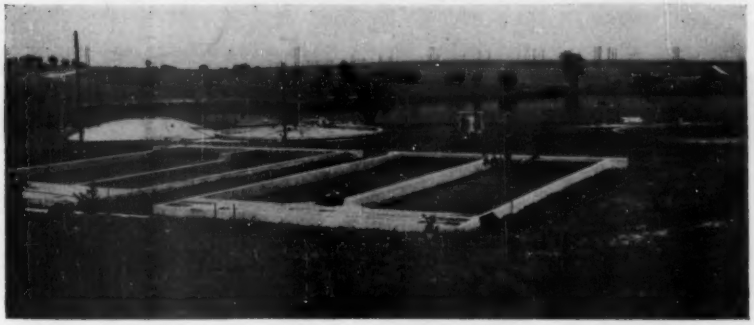
D13000—
A NEW STANDARD
OF DIESEL POWER

Sewerage and Sewage Treatment

Plant Gets Nod as Texas' Most Attractive



This photo of the sewage-treatment plant at Temple, Texas, tells only part of the story of why it won the title of the state's most attractive sewage-treatment plant.

ATTRACTIVENESS in a sewage-treatment plant, reasons the Texas Water and Sewage Works Association, means more than just artistic construction and eye-catching shrubbery. This year, the association honored Temple for having the most attractive sewage-treatment plant in Texas, basing its decision on the plant's cleanliness, absence of odor, maintenance of structures, equipment, and grounds, and efficient operation, as well as pleasing appearance of the facilities.

Temple built its plant in 1939 to serve a population of 15,000. In 1950, it enlarged the plant capacity to serve 45,000 persons. The plant was originally provided with one bar screen, grit chamber, and sedimentation basin, a Yeomans Aero-Filter, a final tank, a digester, and 5-acre lagoon. In 1950, another sedimentation basin filter and digester were added. The plant has two separate drying beds for the sludge which is used by a neighboring veteran's hospital for its golf course and grounds.

The plant treatment facilities produce a 96% reduction in BOD content, dropping it from 174 ppm to 6 ppm. The dissolved oxygen content of the effluent is 8.6.

New Jersey Exam Deadline

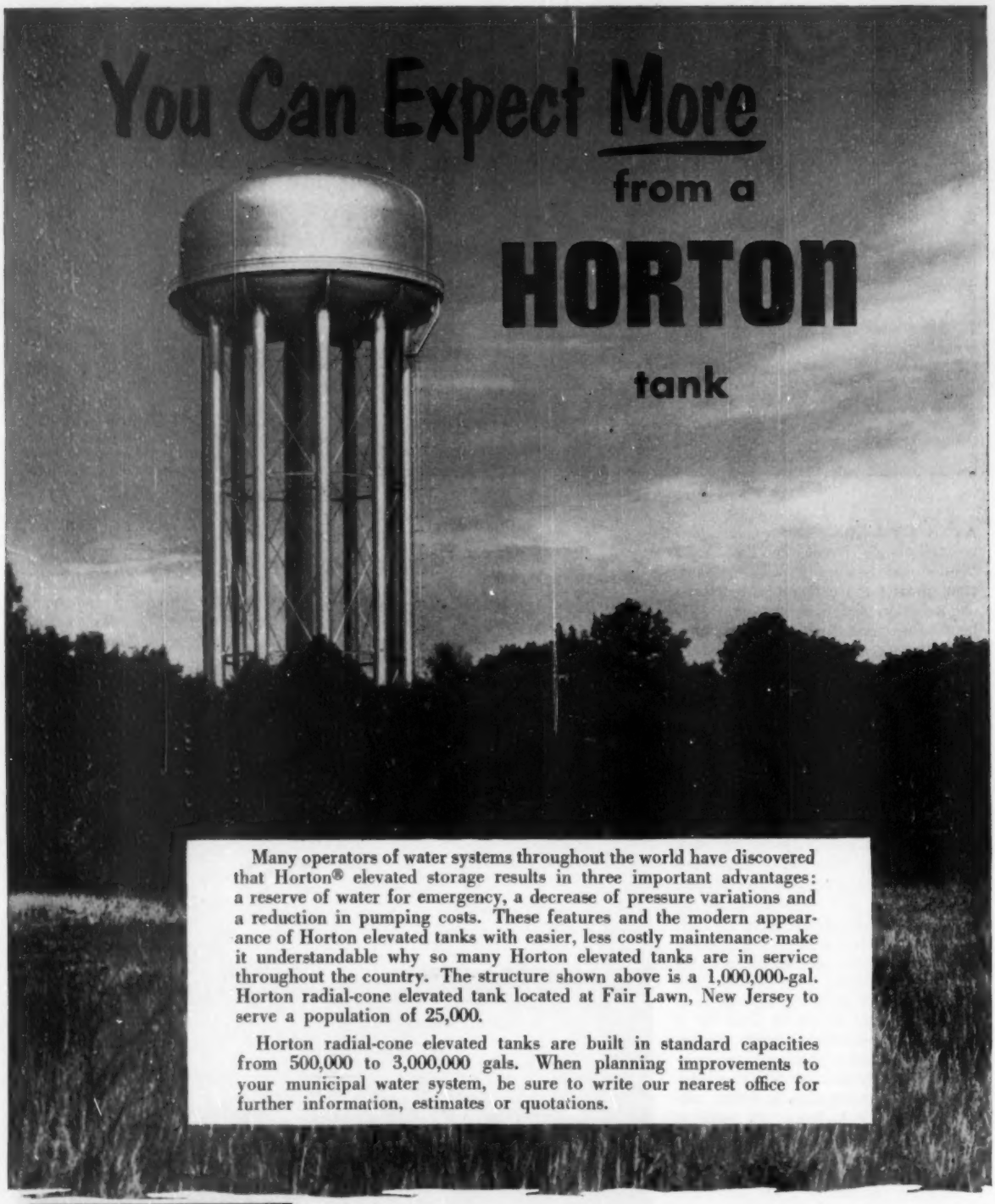
NEW JERSEY sewage- and waterworks men wishing to take the next examination of Sewage and Water-Supply Operators or Water-Treatment Plant Operators must have an application on file with the Bureau of Examination and Licensing of the New Jersey State Department of Health by November 10, 1954.

The Hook Makes It Easy

A HOOK on the bucket of an International TD-6 crawler tractor has been making sewer-pipe laying easy for Bedford, a city of 13,000 in southern Indiana. The U-shaped hook, fastened to a Drott Skid-Shovel, slips into the barrel of the 36-inch pipe sections, permitting the tractor to pick them up and transport them, often across muddy grounds. The use of the hook has cut construction time substantially.

The same tractor-loader can excavate and backfill a trench, eliminating the need for other equipment that would require more men.

A tractor-loader learns how to pick up and place concrete pipe at Bedford, Ind.



Many operators of water systems throughout the world have discovered that Horton® elevated storage results in three important advantages: a reserve of water for emergency, a decrease of pressure variations and a reduction in pumping costs. These features and the modern appearance of Horton elevated tanks with easier, less costly maintenance make it understandable why so many Horton elevated tanks are in service throughout the country. The structure shown above is a 1,000,000-gal. Horton radial-cone elevated tank located at Fair Lawn, New Jersey to serve a population of 25,000.

Horton radial-cone elevated tanks are built in standard capacities from 500,000 to 3,000,000 gals. When planning improvements to your municipal water system, be sure to write our nearest office for further information, estimates or quotations.

HORTON

WELDED STEEL

STORAGE TANKS

CHICAGO BRIDGE & IRON COMPANY

Plants in Birmingham, Chicago, Salt Lake City, and Greenville, Pa.

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Birmingham 1	1502 North Fiftieth St.	New York 6	3308—165 Broadway Bldg.
Boston 16	1002—201 Devonshire St.	Philadelphia 3	1616—1700 Walnut Street Bldg.
Chicago 4	2127 McCormick Bldg.	Pittsburgh 19	3202 Alcoa Bldg.
Cleveland 15	2236 Midland Bldg.	Salt Lake City 4	501 West 17th South St.
Detroit 26	1501 Lafayette Bldg.	San Francisco 4	1535—200 Bush St.
Havana	402 Abreu Bldg.	Seattle 1	1301 Henry Bldg.
Houston 2	2101 C & I Life Bldg.	Tulsa 3	1625 Hunt Bldg.

Water Supply & Treatment

Water Supply Inventories

KEY facilities of the nation's water supply have not kept pace with population growth and industrial expansion, according to an inventory made by the Business and Defense Services Administration of the U. S. Department of Commerce. The inventory covers 548 water works serving over 80,000,000 people in 560 cities and towns. Copies are 25 cents each.

In addition to the inadequacies of supply, the inventory discloses the following facts:

1. Average daily use in these communities is over 12,000,000,000 gallons; this is approximately 150 gallons per capita, or 50 gallons more than the 1910 average.

2. Maximum day demands reach 19,000,000,000 gallons, or 230 gallons per capita.

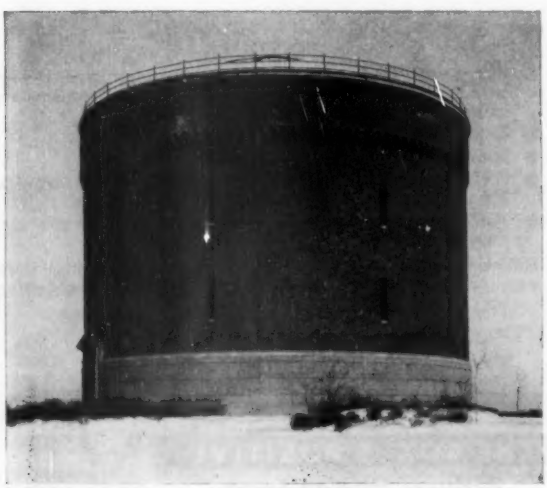
3. Of 16,000,000 services, 13,000,000 are metered, the percentage metered being lowest in cities of over 500,000 population, which includes 32,000,000 people.

Cathodic Protection For an Old Timer

THE Thornden standpipe in Syracuse, N. Y., after 29 years of service, now has a corrosion-protection system that no one had even thought of when the tank was erected.

Originally, the standpipe was supplied with a Hermastic enamel lining that gave a good account of itself during the ensuing quarter of a century. When it became necessary to replace portions of the unit about 14 years ago, the city used the opportunity to experiment with protective paints to discover which would give the best results. Most served very well but were shortlived, lasting only nine to ten years.

Last year, we decided to try cathodic protection on this veteran standpipe. The installation, using electrical current to supply the protective film, cost the city much less than the removal of the old lining and the application of a new one. The installation was furnished and installed by the Harco Company, of Cleveland, Ohio, at a cost of $1,886.



The old Thornden standpipe is protected against corrosion.

The Thornden standpipe holds 2,000,000 gallons and supplies storage to the city's high-service area. The foundation is reinforced concrete. The tank itself is 77 feet in diameter and 60 feet in height. It is composed of 13 courses of ring steel plates which vary from 1.17 inches on the first ring to 0.38 inch at the top.

Two-Stage Chlorination

THE privately owned water system of Butte, Mont., has emerged the victor in one of the nation's toughest chlorine-feeding battles. But, as is often the case, a battle that can't be won in one grand offensive may often be won in two attacks.

About half of the Butte distribution system is supplied directly by gravity from a 360,000,000-gallon reservoir. Flow from this reservoir is variable and unpredictable, ranging from a reversal of flow into the reservoir to a maximum outflow rate of 16 mgd (million gallons daily).

The flow is metered by a 30-inch by 13-inch venturi tube with a Type M register-indicator-recorder. A Builders-Providence Chronoflo transmitter records the entire range with sufficient accuracy to control chlorination. Manually controlled chlorination of this variable flow had never been satisfactory. It frequently wasted chlorine and offered no real protection against objectionable tastes. The variable-flow chlorinating machines on the market, unfortunately, were not flexible enough to cope with the unusual flow characteristics that this reservoir presented.

Consequently, it became necessary to adapt equipment manufactured for other purposes to this particular problem. The method chosen was a two-stage arrangement. The first stage was to chlorinate a supply of water to a 100-ppm (parts per million) concentration, a task that could be performed easily by the existing Wallace & Tiernan Type MDP-M chlorinator, with its capacity of 100 pounds per 24 hours.

The second stage was the pumping of the 100-ppm chlorine solution into the mains. This function is performed by an electronically controlled Proportioneers duplex piston pump that varies its speed in proportion to the change in flow. This pump has a top capacity of 54.8 gallons per minute. This process is controlled by a G-E Thymotrol panel and a 2-hp DC motor. The panel provides 20:1 speed control.

This plant has been in service for over three years and the automatic control has produced sufficient economies to justify its cost. Bacteriological results have been excellent, and chlorinous tastes have been completely eliminated. Moreover, much less time is now required of the operator. Operating costs are limited to the power required for a 2-hp motor, heat for the building, and a few tube replacements.

CLAIBORNE W. BRINCK
Montana State Board of Health
Helena, Mont.

NOW THE FIRST "Packaged" FIRE ALARM SYSTEM

PREVIOUS EQUIPMENT REQUIRED THIS MUCH SPACE

NEW GAMEWELL FORM 4
USES ABOUT THIS MUCH SPACE

For the small community, or for decentralized big city Fire Alarm Systems, The Gamewell Form 4 fills today's needs.

THE GAMEWELL FORM 4

In 20% to 30% of the space previously used, you can install this complete control unit, including batteries.

And the Gamewell Form 4 Automatic Control System enables you to put saved dollars into street fire alarm boxes for public safety and reduced fire losses.

This "packaged" Fire Alarm Control Cabinet is quickly and easily installed. It contains *all* the devices needed for a complete central office setup. It *automatically* repeats box alarms and warns if a circuit is broken. It has a reserve power supply for emergencies and meets NBFU Standards.

FEATURES

- **Requires only 20% to 30% of space previously needed for complete central office equipment including batteries.**
- **Quickly and easily installed.**
- **Reserve power for emergencies.**
- **Available in any capacity required to 10 circuits. Readily expanded to meet growing needs.**
- **Automatically repeats box alarms; warns if a circuit is broken.**

Bulletin 3A gives a complete description of the Gamewell Form 4 Control Cabinet. Write for a copy today. No obligation.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASS.

GAMEWELL

THE BOX IS POSITIVE
Reduces Human Error

(Continued from page 5)

ment program for much-needed hose and apparatus.

Few departments, if any, warrant as much thought and apparently receive less for future capital outlays, as do fire departments. There are fire stations in existence today, built only a few years ago which, because of their small size and inferior construction, are totally inadequate for growing communities.

We hear much about finding more useful work not related to fire duty for firemen to perform. Some advocate consolidation of fire and police departments, under one head and require the duties of both services to be interchangeable. A few small cities claim success in doing this, while others have tried and abandoned the experiment. One city manager with eight years experience with integration said: "An effective fire program needs trained professional leadership."

From a paper given at Mayor's and Councilmen's Institute in Santa Barbara, Calif., June 4, 1954.

Light Meter Raises Lighting Level in Hawaiian Cafes

WITH 50% of liquor violations caused by juvenile drinking, we decided to decree better lighting so our inspectors could spot youngsters, particularly girls, in Hilo's dimly lit bars and cafes.

The General Electric light meter has enabled the Hawaiian Liquor Commission to set a standard which is now followed by all of Hilo's liquor dispensing organizations. Enforcement of the new lighting standard is now assured since suspected violators are subjected to a check of their premises with the meter.

E. S. Capellas, *Chairman*
Hawaiian Liquor Commission
Hilo, T. H.

Complete CD Radio For Cuyahoga County, Ohio

THE Civil Defense radio network for Cuyahoga County, Cleveland, Ohio, under contract with the General Electric Company, will tie together, by two-way radio, the city and county commissioners and executives; all municipal departments such as fire, police, public works, health, transportation, water and power; private companies operating radio-equipped vehicles, such as taxicabs and electric utilities; the Red Cross; and a network of volunteer amateur radio operators.

The $90,000 contract calls for a complete communications system, including base station, mobile, and portable two-way radio equipment for the Cuyahoga County Civil Defense control center, the six-zone control stations, and the five alternate zone control stations plus five triangular self-supporting towers for the necessary antennae.

The equipment will also provide two-way radio links to the state Civil Defense Office at Columbus, Ohio, and the headquarters of the Fifth Area Civil Defense Command. It is designed to be used in case of fires, tornadoes, earthquakes, or floods, as well as during defense emergencies.

Standby Plant Proves Worth

FOX POINT, WIS., houses its fire and police departments in one modern building, where electric devices consist of the police-radio transmitter, the lights, and a stoker for heating, as well as electric controls for the doors of entry and exit of fire apparatus.

All of this equipment is doubly protected by a 10,000-watt Onan standby plant. Installed in November 1953, this plant, says Chief of Fire and Police Departments Harold Olson, has been called on a dozen times and has never failed us.

Special Fire Trucks Save Regular Apparatus

IT'S fine to have first-class apparatus, but it's wasteful to have to use it on brush fires. On a single day in 1948 — just after delivery of our newest American-LaFrance pumping engine and 85-foot aerial truck— the department received 33 calls on grass fires.

Observing that this expensive equipment could be better utilized for high value protection, the department went to work to produce a small pumping engine for fighting small fires. The result was the fine little pumper illustrated here.

The chassis is a two-ton Chevrolet reinforced by six I-beams. A square tank of sheet steel with 410-gallon capacity was next. On it is mounted a new pump bought from American-LaFrance for $1,700 and installed by the firemen here. While firemen are running hose to hydrants, the 410-gallon tank keeps two 2½-inch hoses full of water.

So successful was this venture that another was constructed for alternate use at Fire Station No. 2. Installed in January 1952, it is a Chevrolet cab over engine, equipped with an American-LaFrance pump, and has made several hundred runs as has also the other home-built pumper. These two trucks have kept our first-class apparatus from having to carry the full load of small fires.

Chief William Collier, over 40 years with the Sapulpa Fire Department, has been chief since 1919. Captains George V. Robertson and Jack Wilson, appointed assistant chiefs, deserve much credit for the construction of these Chevrolet cab-over-engine units.

J.Orville Bumpus
City Manager
Sapulpa, Okla.

One of two pumpers assembled by the Sapulpa Fire Department to save wear on its factory-built first-class apparatus.

Shown is the Model 848 Intermediate Plant. There is a Barber-Greene Plant to meet the needs of every user, for every capacity, for every type of mix.

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MIX profitably.

MIX more tonnage per season. **MIX** to meet all specifications.

MIX continuously, with the principle that is inherently automatic.

MIX with mechanically interlocked proportioning for the utmost uniformity.

MIX with the plant that is truly portable.

Let us show you how a Barber-Greene Plant can reduce your costs.

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BG

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descriptive literature . . . sound movies

cost studies . . . nearby job inspection . . . plant layouts

Bad Lands Become Good Neighbors

Sanitary Fill Series, XIII

ONE of the finest accomplishments of the sanitary fill is its ability to make good neighbors of nuisance lands, as has been proved by the sanitary fill programs in Madison, Wis., and Seminole, Okla.

Madison, Wis.

In Madison, the people first protested, but later became enthusiastic. Residents have requested that fills be built in swampy areas adjoining their properties, and contractors have offered to operate fills without cost to the city in exchange for title to the filled areas.

The city began to build a fill when Wisconsin passed a law prohibiting the use of garbage for feeding hogs. Superintendent Brophy decided to use 57 acres of tax-delinquent land adjacent to a high school as his site.

Street Superintendent James Brophy uses an Allis-Chalmers HD-5G crawler tractor with a 1-yard front-end shovel on the fill to do the work. The unit digs the trenches and compacts the garbage, covering it with a 2-foot layer of gravel purchased and delivered to the site.

Seminole, Okla.

In the outskirts of Seminole, Okla., some minor league badlands are being taught by the city's department of sanitation to become model neighbors—with the help of the sanitary fill.

The land is badly gullied and was losing value gradually before the rehabilitation program began. To do the work, the city uses a Caterpillar D6 tractor equipped with a No. 6S bulldozer blade to widen the gullied trenches until they measure approximately 15 feet in width.

The refuse trucks deliver the trash to convenient points at the head of the gully. The bulldozer then compacts the refuse and spreads a cover with earth borrowed from the bottom of the trench in the area where the next day's refuse will be placed.

The city intends to put the land to pasture, holding it with a firm sod to prevent future erosion. The rehabilitation work is under the direction of H. Montgomery, city engineer.

Madison is building a fill on tax-delinquent land. When the operation is complete, the Board of Education and the Park Commission will put it to recreational use.

Gullied land becomes a good pasture with the help of Seminole's sanitary-fill program.

Trash laid in the trench is thoroughly compacted before the cover is spread.

Earth for cover is scooped up from the bottom of the trench, in an area where the next day's refuse will be placed. It is then spread over the compacted refuse.

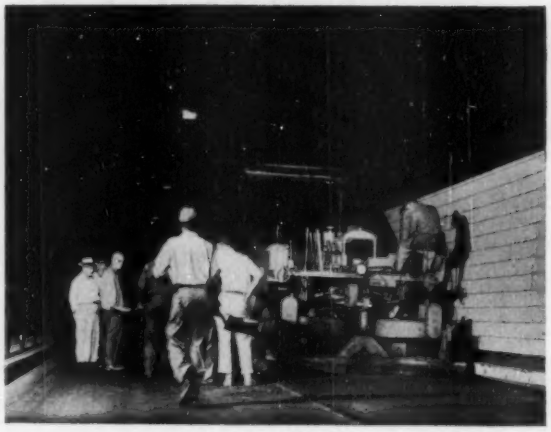
Tunnel Resurfacing Aids Pittsburgh

AN END to the daily traffic bottleneck which has plagued some 25,000 Pittsburgh suburban motorists is now in sight. Resurfacing of the Liberty Tubes, the point of heaviest traffic concentration in Allegheny County, is complete, and work on the West Liberty Avenue inbound tunnel feeder will end shortly, freeing the flow of traffic.

The tubes connect the Pittsburgh South Hills area with the Golden Triangle business district. Traffic tie-up in the inbound tube, the last to be resurfaced, was minimized by completing work during two night shifts from 11 p.m. to 6 a.m.

For this resurfacing work, Allegheny County engineers specified a mix using aggregate with a 3/8-inch maximum size. The contractor spread the material with the new Foote bituminous paver, a product of Blaw-Knox Company.

The material was spread to a depth of 1 inch and in two 11-foot widths, covering existing concrete previously topped with a 2-inch thickness of Allegheny County D binder asphalt. The paver finisher, which operates at speeds of from 15 to 54 feet per minute, is rubber tired to lessen machine shocks and vibration due to the tamping action.



Crews work during the night to keep traffic problems at a minimum while Pittsburgh's Liberty Tubes are being repaved.

The heavy layer of sheet asphalt comes out quickly with the help of the new ripping equipment which is powered by a torque converter, giving the machine tremendous drawbar pull.

Super-Powered Ripper

IN Chicago, the asphalt surfacing came off Jackson Boulevard in a hurry when a big HD-15GC Allis-Chalmers crawler tractor went to work on it with new ripping equipment. The project, in Chicago's financial district, was "supervised" by thousands on the street and from the windows of facing banks and buildings.

The ripping equipment consists of a torque converter that powers a TS-15 Tracto-Shovel, built by Tractomotive Corporation of Deerfield, Ill. The ripper, now a standard product of this company, stripped the blacktop from an area extending from Dearborn Street to Wells Street in about five working hours. The loose material was loaded into trucks by two HD9G tractors with TS-9 Tracto-Shovel loaders.

The torque-converter drive gives the tractor a tremendous drawbar pull. In addition, it permits the operator to slow the unit to an extremely low speed which is necessary when working close to manhole covers to avoid damaging them.

Pasadena Tries Diplomacy

City Engineer Douglas J. MacKenzie, of Pasadena, Calif., is trying the diplomatic approach to placate impatient motorists.

These ADAMS Machines

clear streets of snow and ice with high-speed efficiency

Adams Motor Grader breaking up ice for loading into trucks.

Adams TraveLoader picks up and loads windrowed snow at better than truck-a-minute clip.

Adams Motor Grader, equipped with snow wing, clearing snow from residential street.

● You don't need special equipment for high-speed removal of snow and ice from your streets —not when you put an Adams Motor Grader and TraveLoader on the job.

In heavy-traffic areas, an Adams Motor Grader quickly breaks up and windrows hard-packed snow and ice for truck removal. Equipped with V-plow, snow wing, or using just the grader blade, it does a high-speed job of blading snow to the curbs in less congested sections.

When it comes to loading windrowed snow and ice into trucks, the Adams TraveLoader is unequalled. Traveling as it picks up, it easily loads faster than a truck-a-minute rate—clears your streets of snow and ice in jig time.

Adams Motor Graders and TraveLoaders are real all-around, year-around machines, too . . . perfect for all types of grading and material-loading operations in warm-weather months. Ask your local Adams dealer for full information.

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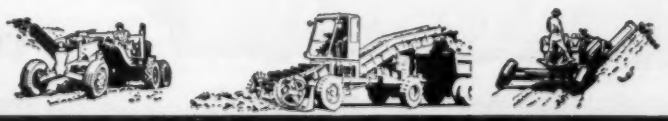

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Type TNA-1
Arrow Neon Signal

Type TNO-1 One-Line Neon Signal

Type TNO-2
Two-Line Neon Signal

A Nationwide Distribution Through Electrical Distributors

Type TNO-3 Two-Line Neon Signal

Each does a special job better than any other signal.

The addition of two new signals, Types TNA-1 and TNO-3, increases the Crouse-Hinds family of neon signals to four different models . . . a complete line to meet your every need. Neon signals are ideal for the control of pedestrians and their large brilliant letters are perfect for route markers and information signs.

Type TNA-1 The big bright arrow is just what you have been waiting for. It can be seen farther, and maintains its shape at greater distances, that any conventional arrow. Drivers "read" the signa' sooner and proceed with assurance. The result is greater safety and faster flow of traffic.

TNA-1 can be added to any conventional traffic signal.

The **TNO Series** is primarily for pedestrian control. Because of their distinctive shape and color, they command obedience, resulting in fewer pedestrian injuries.

Type TNO-1 is a one-line neon signal with up to ten 4½-inch high letters.

Type TNO-2 is a two-line signal with shorter lines. It is useful where width of sidewalk and pole location must be considered.

Type TNO-3 is the latest addition to the TNO Series and combines the advantages of TNO-1 and TNO-2 in a single unit. It not only has two lines but each line is full length . . . up to ten letters. It can handle jobs that are beyond the capacity of the other units. For example, you can have a full length DON'T WALK signal in *Red*, the danger color, on the upper line and also a WALK signal in *Green*, the safety color, on the lower line. The extra letters . . . up to twenty in all . . . make this unit more valuable for use as a warning or information sign.

All neon signals can be furnished with slip-fitter mountings or with brackets for pole mounting. They are available in two-way assemblies.

Crouse-Hinds neon signal housings are cast aluminum, rigid, light weight, and both dust-tight and weatherproof. They are built to Crouse-Hinds high standard of quality and will give years of dependable service.

Write for additional information.

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Parks & Playgrounds

Edited by JOSEPH PRENDERGAST, Executive Director, National Recreation Association

NIMLO Model Ordinance On Conduct in Public Parks

A comprehensive coverage of park rules and regulations is suggested in a model ordinance regulating conduct in public parks prepared by the NIMLO Model Ordinance Service.

Municipalities interested in adopting a comprehensive ordinance covering recreation and park properties or in revising existing ordinances would do well to check their local needs against this model.

Some of the suggested sections may well be covered by administrative regulations; all of them should be thoughtfully considered in the light of local needs.

Sections covered include buildings and other property; trees, shrubbery, lawns; wild animals, birds, etc.; sanitation; traffic; recreational activities; behavior; merchandising, advertising and signs; park operating policy.

Copies of the ordinance can be secured by writing to the National Institute of Municipal Law Officers, 730 Jackson Place, N. W., Washington, D. C.

New Action on Littering In Recreation Areas

PARKY the kangaroo has been officially adopted in Los Angeles as the symbol of that city's year-round campaign to keep its parks, roadsides, and beaches clean. "Parky" was selected in a city-wide contest sponsored by the Department of Recreation and Parks to create a character like Smokey the Bear to deal with littering.

Mayor Norris Poulson by proclamation and the City Council by resolution launched "Parky" on a promotion program to make him thoroughly known to Los Angeles residents. Thousands of auto decals were made available through the various municipal employees' associations. Six thousand bright yellow trash receptacles with a picture of "Parky" and his slogan were placed in park and beach areas.

Los Angeles hopes that "Parky" and his slogan, "Help Keep Your Parks, Roadsides, and Beaches Clean" will help cut down on the unsightly mess left by litterbugs as well as shift some funds now spent for cleanup to further beautification and development.

"Parky" and his slogan may be used by other municipalities with permission of the City of Los Angeles Department of Recreation and Parks. Write to Orin Wennerstein, Supervisor of Maintenance, Griffith Park, Box 255, Los Angeles 27, Calif.

Municipalities have a new national ally in their continual campaigns to reduce littering in recreation areas. Keep America Beautiful, a national public service organization for the elimination of litter, is establishing a long-range education program to encourage good housekeeping habits by all users of public areas.

KAB was initially launched by manufacturers and packers of food items concerned over the unsightly way in which their wrappers, cartons, cans and bottles were being disposed of on public roads and recreation areas.*

* See THE AMERICAN CITY for July 1954, page 18.

Every Town a Hometown For Servicemen

NEW approaches to community hospitality for servicemen and their families are paying dividends in good municipal public relations. In Fayetteville, N. C. a letter to Mayor George B. Herndon from a serviceman formerly stationed there was recently published in the local paper with favorable editorial comment.

The letter said in part:

I have been wanting to write a note of thanks to you and, indirectly, to the residents of Fayetteville to thank you all for the friendly hospitality my wife and I experienced during my tour of duty with the United States Army at Fort Bragg.

During our residence of one and a half years, I had the opportunity to work with the City Recreation and Park Department. My wife was a teacher on the Fort Bragg elementary staff. Through our relations with Mr. Orcutt, Superintendent of Recreation and Parks . . . and fellowship in the church, we really joined in community affairs and sincerely thought of Fayetteville as "our home."

Experts on morale in the armed forces are encouraging community-military relations where servicemen and members of their families participate in regular community leisure activities as individuals. Big "special" events where masses of service personnel are entertained by the community are no longer considered the most effective form of hospitality.

Instead, the armed forces seeks to get the serviceman and the civilian together on the basis of common interest.

Leisure interests offer one of the best means of bringing people together on common ground. Community recreation programs across the country are serving civilian and military alike and making more and more communities temporary "hometown's" for their temporary military residents.

Housing Authority and Park Commissioners Sign Agreement

AN agreement made in June of this year between the Nashville, Tenn. Housing Authority and the Board of Park Commissioners of Nashville, defines responsibility for recreation at the Authority's Preston Taylor Homes.

Under the terms of the agreement, the Housing Authority agrees to provide indoor and outdoor recreation facilities, janitorial supplies and services, maintenance and repairs, utilities, and certain items of non-expendable and expendable equipment. The Park Board agrees to provide planning, directing, and supervising of a leisure-time program. The program is designed for all ages and will cover the full gamut of recreation opportunity.

Termination of the agreement is provided for by advance written notice by either party.

Extra STRENGTH BEAUTY

WITH HAPCO *Aluminum Alloy* BRACKETS AND STANDARDS

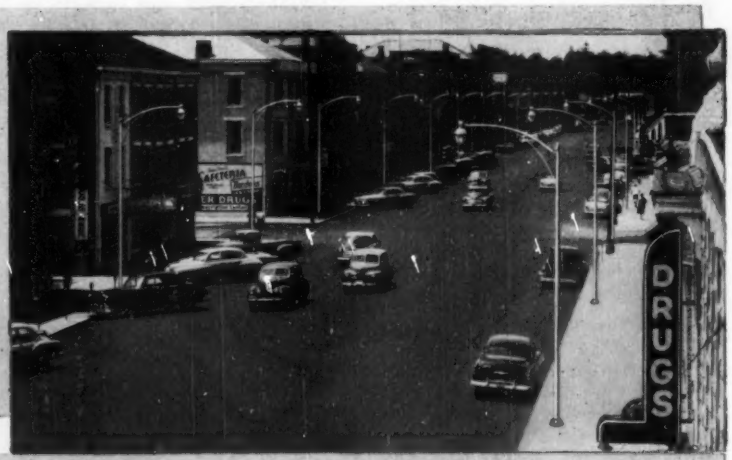
An Indiana city found a happy solution to its street lighting problems in Hapco Aluminum Alloy Standards and Brackets. Dead end and corner locations are provided with poles of larger diameter and greater weight, with the same design features as the other standards.

Extra Strength . . . The Hapco method of production offers a desirable versatility in providing the poles required for heavy duty or special services while still maintaining the harmonious beauty of the system.

Extra Beauty . . . All Hapco Standards are Venetian column type acclaimed by architects for eye appeal and strength. Every pole is one piece, free from longitudinal seams or transverse joints, and is of uniform wall thickness throughout. Standards and brackets are mat finished for permanent beauty without maintenance or painting cost.

This 10-inch diameter pole at a corner location harmonizes with the regular smaller diameter standards, yet has the extra weight and strength required.

The lighting system in the business section is beautiful by day as well as by night, thanks to Hapco graceful standards and brackets in permanent aluminum alloy.



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Our Municipal Notebook

Do Fire Stations Belong in Public Parks?

AN IMPORTANT question of municipal policy is posed by the articles on pages 105-106 of this issue of THE AMERICAN CITY: *Are public parks suitable sites for fire stations?*

The case for the affirmative, based on the practical experience of Kansas City, Kans., is presented by Mayor Clark E. Tucker of that city; while a vigorous dissent is voiced on behalf of the National Recreation Association by Joseph Prendergast, Executive Director of that organization. Neither answer, however, is a categorical "always" or "never"—and to that extent THE AMERICAN CITY is in agreement with both writers.

As this magazine sees it, there are very few cities, if any, where it is wise to invade existing park or playground areas for purposes other than public recreation; *but* when new fire stations are needed in residential areas, sites should be chosen large enough to give the fire house an attractive setting—and if possible to create some new or enlarged park and playground space immediately adjacent.

Thus the city would gain some additional open space and would be able to test the practicability of the Kansas City (Kans.) proposal for cooperation between police and recreation departments.

Federal Department of "Urbiculture" Proposed

THE American Municipal Association, in its *Washington Municipal News* of August 1954, calls attention to a bill introduced by Congressman J. Arthur Younger, of California, to create in the federal government a Department of Urbiculture.

"My purpose in introducing the bill to establish a Department of Urbiculture," said the Congressman in a statement to AMA, "is to do for the city population what we are doing for the farm population through the Department of Agriculture. . . .

"Urbiculture is a new word, but as we use the term it means the art or science of cultivating or developing the urban land so as to yield the maximum in stabilized financial return consistent with the production of the maximum in housing amenities.

"On a national scale we have attempted to deal with the fringe of these urban problems and we have various departments devoted to housing and health. What we need now is to establish a department with cabinet rank into which will be transferred various departments dealing with city life and to establish many new ones."

It is interesting in this connection to recall that more than 40 years ago—in our issue of January 1912—THE AMERICAN CITY carried an article by Philip Kates, which was headed:

> **A National Department of Municipalities—**
>
> **Why Should Not Congress Create Such a Department for the Study of Municipal Conditions at Home and Abroad?**

Later that year this proposal was brought to the attention of Woodrow Wilson, then a candidate for President of the United States. In reply, Dr. Wilson wrote to the editor of THE AMERICAN CITY, under date of August 22, 1912:

> "I must frankly tell you that I really have not had time to seriously consider the advisability of establishing a national department of municipalities. The suggestion interests me very much, indeed, and, if I should be elected to the Presidency, I should wish to have an opportunity to discuss it very seriously, indeed, with those interested."

But urgent national and world problems were so pressing that President Wilson found no time, so far as is known, to pursue this question of federal service to municipalities.

In the opinion of THE AMERICAN CITY the need for an over-all National Department of Municipalities is much less than was the case four decades ago. This is owing, in part, (1) to various recent reorganizations of federal departments and agencies; (2) to the spread of the council-manager form of municipal government and the establishment of local planning and zoning boards; (3) to the excellent aids to municipal efficiency rendered by such national organizations as the "1313" group with headquarters in Chicago and such citizen associations as the National Municipal League and the Governmental Research Association, and (4) to the effective work of the various foundations, educational institutions, state leagues of municipalities and other agencies working for municipal improvements and civic advance.

In other words, much of the research and guidance envisioned in the 1912 proposal is now available for municipalities from sources other than the federal government; and municipal efficiency can thus be achieved with much less reliance on Uncle Sam than seemed to be essential four decades ago.

What do our readers think?

Doctor of Philosophy Degree in City Planning

THE University of Pennsylvania has started a graduate study program leading to a degree of Doctor of Philosophy in City Planning. The new program will ordinarily require two years of graduate study for those who have a Master's degree in

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September 1 to September 15, 1954

Date of Sale			*Purpose*	*Average Maturity (Years)*	*Net Interest Cost Per Cent*
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9– 8–54	Lemmon, S. D.	33,000 32,000	Auditorium	7 16-1/2	2.47
9– 8–54	West Chester, Pa. ...	160,000	Improvement	6	1.49
9– 9–54	Danbury, Conn.	250,000	San. Sewer System	9-1/2	1.83
9–13–54	Wakarusa, Ind.	34,000	Street improvement	5	1.597
9–13–54	Manasquan, N. J. ...	50,000	Water	8-5/6	2.23
9–13–54	Portland, Ore.	500,000	Port Imp. and Equip.	5-1/2	1.531
9–14–54	Tulsa, Okla.	2,430,000	Ind. Sch. Dis. No. 1	4	1.249
9–14–54	Franklin Co., Ohio ..	772,000	Expressway	13-5/6	1.983
9–15–54	Chelsea, Mass.	60,000	Sewer and Storm Drain	3-1/2	1.48
9–15–54	Guilderland, N. Y. ..	40,000	Fort Hunter Fire Dis.	8	2,726
9–15–54	Allentown Au., Pa...	600,000	Water Revenue, 1954	11-1/6	1.908
9–16–54	Greenburgh, N. Y. ...	262,000	N. Elmsford Sew. Dis.	15	2.715

Compiled from THE DAILY BOND BUYER

city planning or equivalent graduate training or experience in related fields.

The Ph.D. courses will be directed toward training individuals for advanced research in problems dealing with urban areas. The Master's degree in City Planning given at the University will be continued as the recognized degree for students contemplating careers in city planning practice.

The Committee in charge of the new program includes the following members of the faculty of the Graduate School of Arts and Sciences: Professor James C. Charlesworth, Political Science; Professor Thomas C. Cochran, History; Professor Reavis Cox, Marketing; Professor Edward P. Hutchinson, Sociology; and Professors Martin Meyerson, Robert B. Mitchell, and William L. C. Wheaton, City Planning. Professor Wheaton will serve as chairman of the Committee.

Inquiries concerning the program may be addressed to the Chairman, Committee on City Planning, School of Fine Arts, University of Pennsylvania, Philadelphia 4, Pa.

Chicago Contest Awards Announced

A bold 100-year redevelopment program for Chicago's Central Commercial area won for a team of five young New Yorkers the $20,000 First Award of the Carson Pirie Scott & Co.'s Centennial Competition in City Planning.

The prize-winning entry, described by the contest jury as embodying "a grand conception fully in keeping with the splendid traditions of Chicago," was developed by Herbert A. Tessler, Leon Moed, Joseph A. D'Amelio, and William Liskamm, former seniors at Pratt Institute of Design in Brooklyn, N. Y., and William E. Berger, design critic at Pratt.

Second and third place awards providing $7,500 and $2,500 in prizes went respectively to a team of six Philadelphians headed by Wilhelm von Moltke and a team of 11 Chicago men, nine of whom are associated with the Chicago planning and architectural firm of Pace Associates.

The contest was sponsored by Carson's one of Chicago's leading department stores, to provide inspiration and practical ideas for the improvement of the Loop area of that city.

Nearly all plans dealt with Chicago's transportation problems in detail, with most recommending multilevel travel-ways separating pedestrians, vehicular traffic, and mass transit.

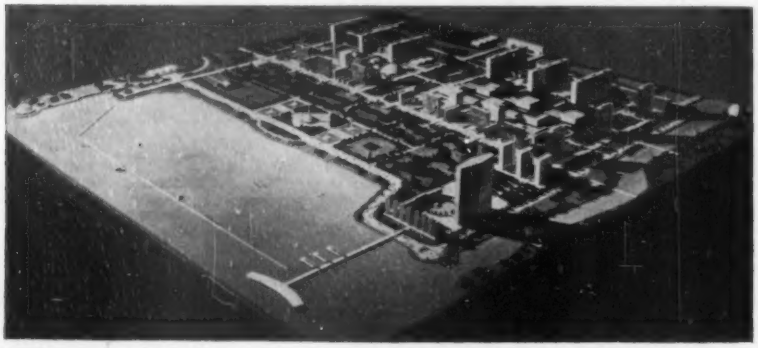
The first-prize design proposes the construction of vehicular tunnels under the Chicago River to relieve the severe tie-ups created when the existing bridges must be opened to allow large boats to pass.

Many designs eliminate the private auto from the commercial district entirely, and nearly all provide large supplies of parking at the edge of the district with moving sidewalks carrying pedestrians to stores and offices from there.

All plans provide much more open space in the downtown area by including parks and green areas of small scale that could be easily reached and used by the persons working and shopping in the commercial areas. Many other plans sought to eliminate the confusion and conflict of noise and smells, lights and signs. They also attempted to give relief from the brick and stone and pavement which today press in everywhere in the district.

The Chicago banks especially came in for beautification treatment similar to that found on the lake front, capitalizing on the natural as well as man-made assets already available.

A total of 106 presentations were submitted to the five-man jury headed by Dr. Henry T. Heald, chancellor of New York University and former president of Illinois Institute of Technology.



This concept of how the business center of Chicago ought to be redesigned won the First Award in the Carson Pirie Scott & Co. Centennial Competition in City Planning.

Features of a City-Wide Revaluation Program

HAS your town or city undertaken a complete property reassessment program recently? If it hasn't, and if the following danger signs are prevalent in your community, then you ought to begin such a revaluation study, according to Joseph J. Lennox, President of the National Association of Assessing Officers.

Some of the danger signs are: (1) demands by the local citizenry for changes in assessment methods—changes such as the elimination of a board of part-time assessors and the installation of one full-time assessor; (2) realization on the part of local assessors that there is an inequality between the assessing of rural and urban areas within a given tax district; (3) a lack of uniform methods in the local assessment office.

According to a recent paper by Mr. Lennox*, the following elements should be included in a revaluation program.

In general it should provide a tax map and such auxiliary maps — zoning transportation, etc.—as may be necessary for the efficient operation of the assessor's office. A land valuation map showing front foot unit values for every block in the tax district is a "must."

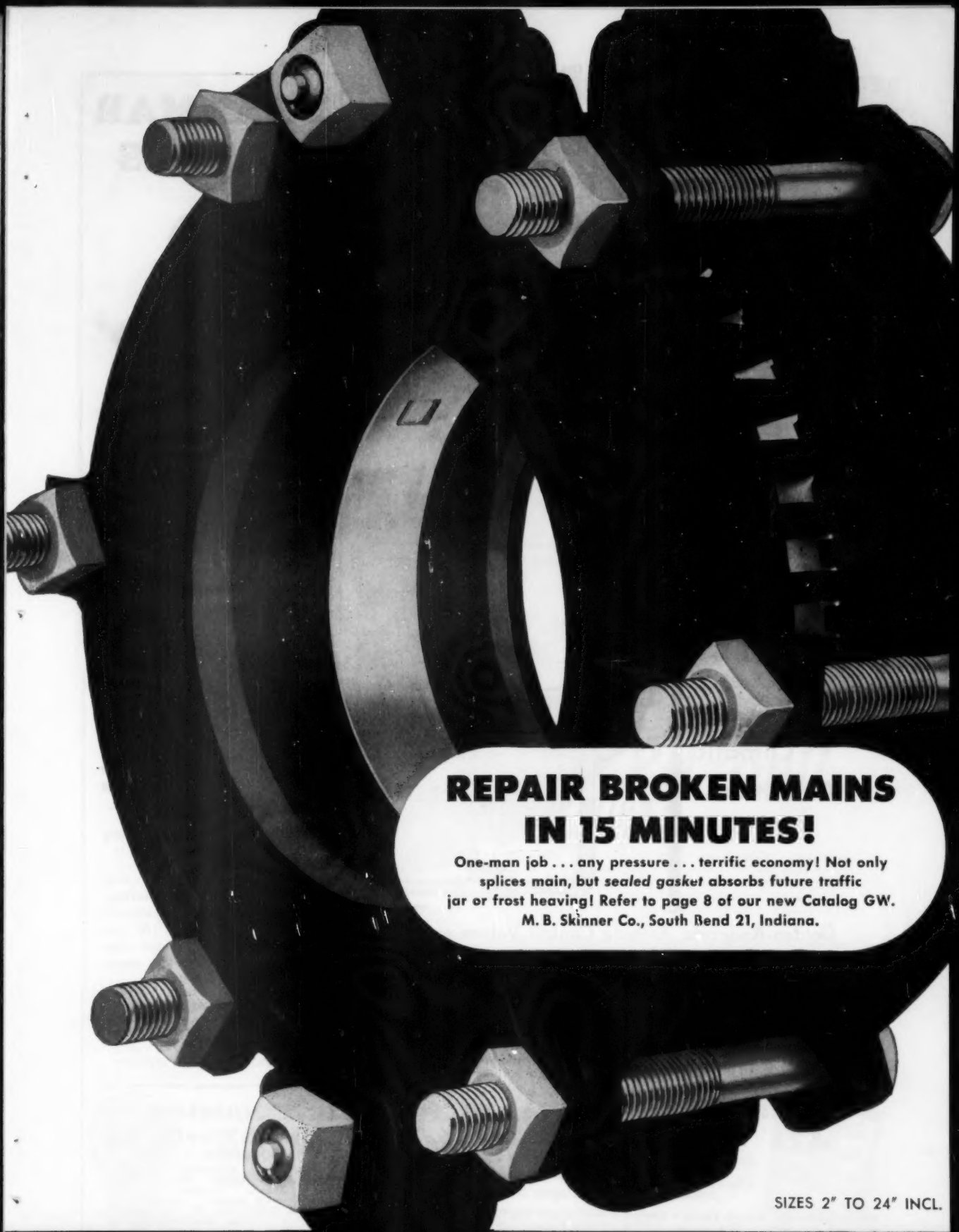
Buildings must be measured and the square foot area or cubical contents computed. Buildings should be classified as to use and construction features. Unit reconstruction cost tables, depreciation, and other tables, must be prepared.

Reconstruction cost of buildings must be computed and their sound value determined. A property record card showing all land features and computations, all building characteristics, sales, rental and mortgage information must be established.

This card must also show the land and

* "Revaluation Program to Increase Revenues," by Joseph J. Lennox. Published by Municipal Finance Officers Association of the United States and Canada, 1313 E. 60th St., Chicago 37, Ill. Price 50 cents.

(*Continued on page 25*)



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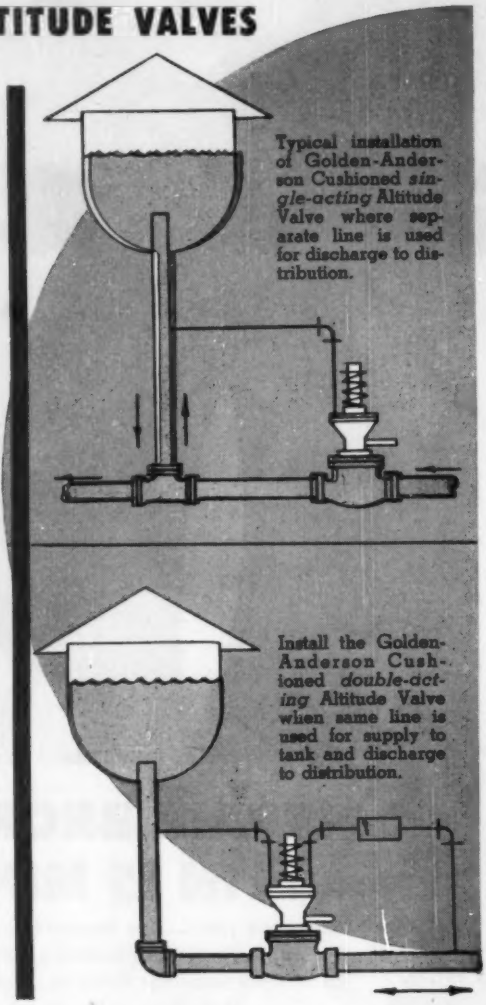

Typical installation of Golden-Anderson Cushioned *single-acting* Altitude Valve where separate line is used for discharge to distribution.

Install the Golden-Anderson Cushioned *double-acting* Altitude Valve when same line is used for supply to tank and discharge to distribution.

Golden-Anderson Altitude Control Valves require no floats or complicated fixtures, can be quickly and easily installed, either above or below ground, and maintain water levels in reservoirs and tanks within 3" to 12" variation.

Write for bulletin W-4—it contains the technical facts you want to know.

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Non-Return Valves • Altitude Valves • Solenoid Valves • Engine Stop Valves • Swing Check Valves
Float Valves • Pressure Reducing Valves • Surge Relief Valves for air, gas, steam and water

BRAXMAR BADGES

Standard Badges Since 1879

Write for catalog illustrating badges for Police, Fire and other City, County and State Officials
John O. Veit, Pres.

C. G. Braxmar Co., Inc.
216 E. 45th St., New York 17, N. Y.

ROADMASTER Street Sweeper WIRE

High Scleroscope Rating
Uniform temper.

Specially processed for high fatigue — against breakage. Long wearing. Conveniently cut and delivered in 100 and 200 lb. boxes. Prompt shipment from stock of all standard sizes.

This gutter broom wire will prove an economy in your service.

"MORE MILES PER BRUSH"

JOHNSON Steel & Wire Co., Inc.
WORCESTER 1, MASS.
New York Philadelphia Pittsburgh Cleveland Detroit Akron Chicago Atlanta Houston Tulsa Los Angeles Toronto
A SUBSIDIARY OF PITTSBURGH STEEL COMPANY

How Many of These...

11 Attachments to the *Pit-Bull* FIT INTO YOUR OPERATION?

Do you find something that you need? Chances are there are several. Maybe it's a machine that you have needed on occasional jobs, but you called in custom operators rather than invest in high-priced equipment.

Now, with the Davis ***Pit-Bull*** you can AFFORD your own! Why? Because the ***Pit-Bull*** is a high-quality unit with ELEVEN different attachment for low-cost versatility. You buy only the attachments you need without investing in a new power unit for each one.

Notice how all the attachments fit the same basic unit. They can be changed from one to the other in a matter of minutes. You save on labor costs, too, by letting one man and the ***Pit-Bull*** do a variety of work without having costly equipment sitting idle.

There's no sacrifice in performance either. The ***Pit-Bull*** converts your Ford or Ferguson tractor into a powerful industrial machine. Installation of syncro-mesh reversing transmission gives you greater maneuverability with four speeds in each direction, plus extra power for digging and loading. Reversal of the seating and steering controls lets you sit comfortably right over your work so you can see exactly what you're doing.

The Davis ***Pit-Bull*** is guaranteed to outperform conventional equipment pound for pound, dollar for dollar!

Check This List of Attachments:

1. Loader with or without Scarifier
2. Back-Hoe
3. Trencher
4. Rotary Broom
5. Swinging Crane
6. Lift Fork
7. Roller
8. Post Auger
9. Dozer
10. Hammer
11. Rotary Mower

Ask for a Demonstration!

DAVIS PRODUCTS WICHITA KANSAS 1ST QUALITY VERSATILITY APPEARANCE PERFORMANCE

Write for this Brochure On the Davis Pit-Bull and Ask for the Name of Your Nearest Dealer

MID-WESTERN INDUSTRIES, INC.

1009 SOUTH WEST STREET, DEPT. A, WICHITA, KANSAS

The Davis Pit-Bull Is Manufactured by the Makers of the Davis Loader, America's Quality Front-End Tractor Loader!

PB-5

Don't Install Yesterday's Traffic Control

THE NEW **EAGLE** 'EF20' TRAFFIC CONTROLLER INSURES MODERN

AUTO-MOTION

MEETS ALL GROWING TRAFFIC NEEDS .... in the field

COMPARE . . . part for part with any other controller . . . JUDGE for yourself

MORE VERSATILE

The EF 20 is readily expansible . . . you can add new features on the job.

LOWER MAINTENANCE

This controller is designed for the easiest and lowest cost maintenance.

BETTER SERVICE

Built with heavy duty, rugged, long life parts, designed for traffic duty.

Eagle "Auto-motion" is the answer to your present and future traffic problems. Eagle leads the way with complete flexibility. Lower and easier maintenance plus Eagle's modern design with the future in mind, insures lower cost traffic control. Ask today for a demonstration of the newest of traffic control.

EAGLE SIGNAL CORPORATION *Moline, Illinois*

EAGLE EQUIPMENT SAVES LIVES — SAVES TIME

(*Continued from page 20*)

building values and all computations upon which the value was built. A manual must be written to guide present and future assessors.

There are three basic ways of carrying out a revaluation program, according to Mr. Lennox. The first way is to assign the whole job to the local assessment office, but this is not recommended unless the local assessor is a man of unusual ability. The second method is to expand the local assessment staff and hire an experienced revaluation appraiser from the outside to direct the reassessment. The third technique is to turn the entire job over to a reappraisal firm which will move in and complete the work in consultation with the local assessing officer.

Once the revaluation is completed, Mr. Lennox says, new construction must be valued by the same methods used in the revaluation program, in order to prevent inequalities from creeping in. Finally, Mr. Lennox states that reassessment programs should be undertaken at regular intervals so that "no taxpayer is called upon to bear more than his just share of the tax burden."

AAA Urges Zoning Measures to Protect Investments on New Highways

MAJOR new highway construction may prove to be a multibillion-dollar waste unless provisions are soon made to protect and zone the roadside, the American Automobile Association warned on August 23.

The AAA Executive Committee, meeting in Providence, R. I., said it views highway zoning as "being more urgent than ever." In a resolution the Committee urged affiliated motor clubs to adopt as primary 1955 legislative targets the enactment of state laws on highway zoning and controlled access.

"Vast investments are being made by the Federal Government and the States in the construction of new highways," the AAA statement declared. "We are now spending more money than ever to improve and expand our road network. President Eisenhower has proposed an additional huge outlay of $50,000,000,000 on roads over a 10-year period.

"These expenditures, representing one of the greatest efforts at transportation advancement in history, clearly should bring our highway system up to date, obsolete though much of it is now. However, it is imperative to recognize that new highways can become old long before their time unless construction is accompanied by highway zoning and other measures to protect the roadside. Without such zoning and protection, the nation could well dissipate billions of dollars and find itself soon again in a highway crisis."

The AAA committee charged that uncontrolled commercial development, known as "ribbon development," along older roads has constituted a "hazard to safety, reducing traffic capacity and resulting in highway blight."

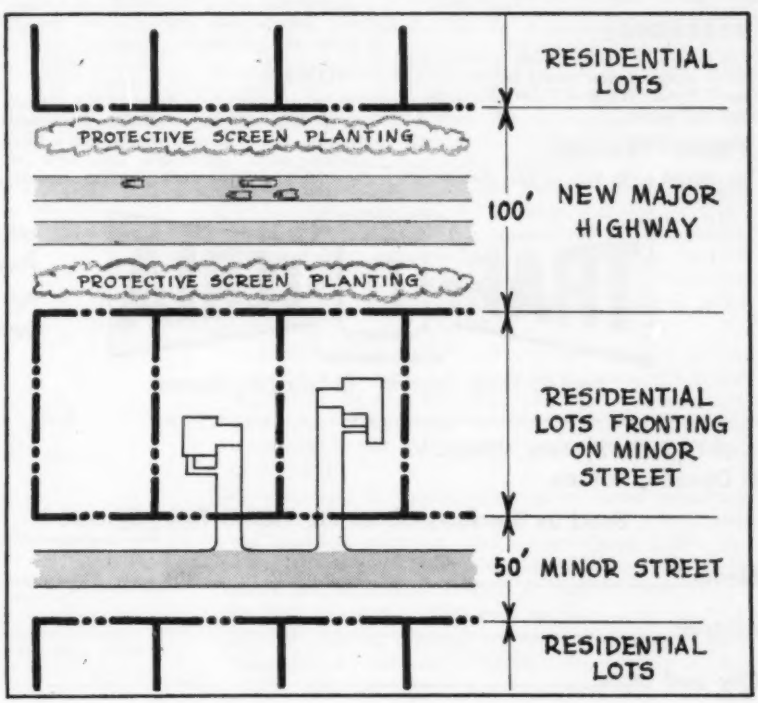
Murphreesboro to Protect Land Development Near Major Highway

ANTICIPATING that the construction of a major highway bypass around their community will result in the ultimate subdivision of 750 acres of land for residential and commercial purposes, the Murphreesboro (Tenn.) Planning Commission is completing detailed land-use plans for areas that will be adjacent to the proposed highway.

The government of this city of over 13,000 persons is assembling the land for the highway. As reported by the Tennessee State Planning Commission, of the 9,200 feet needed for the 100-foot-wide right-of-way, 7,100 feet have been given by various property owners, leaving 2,100 feet to be bought by the municipality.

Extensive residential developments, two school sites, two recreational areas, and three commercial centers are among the facilities envisioned by the Commission in drawing up the plans for the area near the highway. To keep the new bypass as free from traffic interruptions as possible, only a limited number of streets and driveways will be permitted to intersect the road.

Residential lots that abut on the highway will be required to have access to minor streets, rather than out to the through highway. As shown on the accompanying sketch, the plan also calls for buffer strips of protective landscaping to be developed between the new highway and residential developments on abutting land.



speaking of parking control . . .
TRAF-O-TERIA system users have some news for YOU

A recent nationwide survey of all Traf-O-Teria System users showed these results, among the more than 50% of users who responded:

35.4% average increase in percentage of parking violation collections.

29.9% average increase in dollar volume of collections.

100% favorable public reaction to the Traf-O-Teria System.

The comments offered by many users seem fully as important as the statistics. Here is a typical cross section:

ILLINOIS

"Saves the violator the trouble and embarrassment of going to the police station, and seems to keep everybody happier. . . . I think it is the most satisfactory way of handling the situation that I have seen."

MISSISSIPPI

"Prior to Traf-O-Teria System, our over-parking fine was $1.00. We reduced this to 25c, but we actually collect about 5% more in money. The new System has eliminated all complaints. The public is most pleased."

IOWA

"This System involves less work on the part of the traffic officers and is accepted by the general public as more favorable."

WEST VIRGINIA

"The Traf-O-Teria System is very satisfactory to us . . . almost 100% of our tickets issued are returned to the box."

NEBRASKA

"The city had a small number of meter fine deposit boxes on the streets before placing Traf-O-Teria. We find Traf-O-Teria much more satisfactory."

PENNSYLVANIA

"No attempt to fix these as were the others."

TEXAS

"We believe that the Traf-O-Teria System will increase our collections from 50% to 80%, and possibly more. The public's reaction has been very good. It has also lightened the load of the personnel in the Traffic Bureau. Before the installation of the System, at least one person was required, full time, to wait on people coming to the Bureau to settle overtime parking tickets. Since the installation of the Traf-O-Teria System, very few people bother about coming to the office."

FLORIDA

"Greater public convenience. . . . Increased percentage of collections . . ."

WYOMING

"The people favor these boxes as they are able to use them to save time (otherwise required) in going to and coming from City Hall."

MICHIGAN

"Violator (reaction) very favorable — Business (reaction) same — Public relations outstanding — Violations decreased."

WISCONSIN

"Eliminates complaints, and saves the embarrassment of people having to come to the police station. Working out better right along."

OKLAHOMA

"The public reaction was most favorable. I think it was one of the best things we have ever done to make better relations with the police and the public."

IOWA

"I am very much in favor of this System, as it simplifies the collection of parking tickets. Also I'm sure we get back a lot of tickets from out-of-state cars that we wouldn't with the plain way."

PENNSYLVANIA

"System working out very well in our community. General public likes it very well. Has certainly increased our payment of penalties and weekly collection."

TEXAS

"We have had meters for about 3 months. Comments very favorable toward System. Opposition to meters subsided greatly after installation (of System). Now people seem to be happy with parking meters."

KANSAS

"Fines reduced from $1.00 to 25c. The public reception is very, very good in this manner of fine payment. We would never think of going back to the old way."

ARIZONA

"Under the old system we normally collected 50% of tickets issued during day. Under (Traf-O-Teria) System 85% of tickets issued are paid same day. Complaints regarding meters are practically nil. We get many favorable comments."

OREGON

"We use the courtesy nickel system (in conjunction with Traf-O-Teria System). The public and tourists really like the new setup we have."

PENNSYLVANIA

"This is our first meter system business and (would) say we're greatly satisfied."

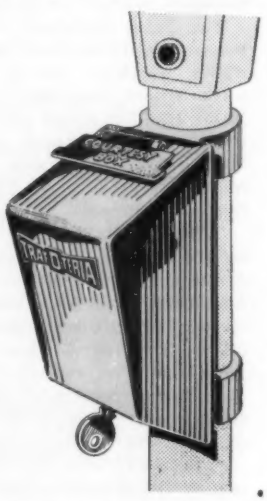
IOWA

"Collections from local people are more prompt, eliminating special notices of delinquency. We estimate that more than half of the out-of-county car owners now pay violation tickets, where only a small percentage paid prior to installation of Traf-O-Teria System. We estimate 90% of payments are made in Traf-O-Teria boxes, eliminating counter traffic at the City Hall."

TRAF-O-TERIA

Traf-O-Teria System, El Dorado, Kansas

THE ONLY PROVEN SYSTEM FOR FRIENDLY CONTROL



Traf-O-Teria System (Dept. V)
El Dorado, Kansas

Send us the facts about the Traf-O-Teria System.

Name_____ Title_____

Address_____

City and State_____

Some Current Municipal Trends

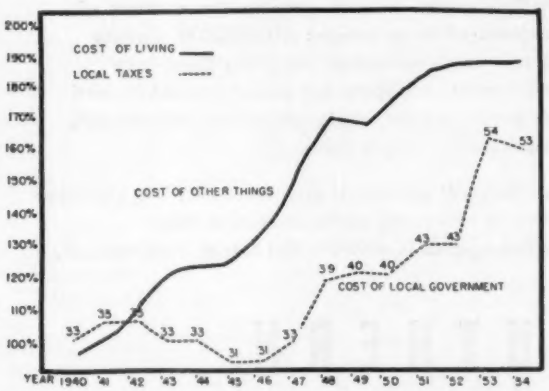
Municipal Services Are Today's Bargains

WHEN local government costs are compared with the costs of other necessities, it becomes apparent that municipal services are one of the bargains of the day. Recently, a number of cities and towns have published comparisons between their tax-rate trends and the trend in the cost of living. The accompanying chart is representative of such comparisons. It shows that since 1942 the local tax-rate trend in Kenosha, Wis., has been consistently lower than the cost-of-living index.

This trend is not characteristic of Kenosha alone, for repeated studies have shown that local and state tax costs have fallen from 9.3% of the national income in 1942 to 6.9% in 1952.

These facts are important because they reveal municipal costs in a proper perspective with other costs and suggest that in spite of higher volumes of local expenditures, local taxes are still not overburdening the taxpayer. Apparently some such understanding of the tax picture lay in the backs of the minds of Kansas City, Mo., taxpayers when, early in August, they went to the polls and voted by margins of up to seven to one for a $57,000,000 bond program for public improvements. Here is a list of the projects approved by the voters:

New freeway construction and modernization of local traffic arteries	$19,500,000
Airport improvements	8,500,000
Indoor sports arena and exposition building	6,000,000
Waterworks improvements	7,500,000
Parks and playgrounds	2,951,000
Purchase of baseball stadium	2,000,000
Sewer improvements	1,500,000
Urban redevelopment	1,355,000
Fire Department improvements	1,405,000
Municipal farm improvements	1,433,000
Hospital improvements	1,037,000
Neighborhood shopping district improvements	1,500,000
Police Department improvements	1,000,000
Armory improvements	830,000
Public works field headquarters	657,000
Swope Park improvements	338,000



Reprinted from the 1953 Annual Report of Kenosha, Wis., this chart shows the relationship between the tax-rate trend in that city of 55,000 persons and the cost-of-living trend. It is apparent that municipal taxes have not increased as rapidly as the costs of other necessities of living. (The small figures appearing along the "cost-for-local-government" trend indicate the tax rate in mills for the various years.

New Town Boom Is World Wide

MASS-PRODUCTION techniques in building housing and rapid industrial developments in sparsely populated areas are spurring a trend toward more and more new towns throughout the world.

Recent publicity concerning the new town of Kitimat, British Columbia, has overshadowed the fact that the Ontario Department of Planning and Development is planning a number of new communities to replace settlements that will be flooded by the St. Lawrence Seaway and Power Project in the future.

Similarly in Western Australia, the new City of Kwinana, which will ultimately house 20,000 to 25,000 persons, is now under construction.

Further news of these new towns will be featured in future issues of THE AMERICAN CITY.

Rising Trend of Crime in Cities Calls for Action

CRIME in American cities continued to rise in 1953, according to statistics contained in the latest issue of the FBI's annual bulletin, *Uniform Crime Reports for the U. S.* During 1953, persons living in cities were victims of 4.5% more major crimes than in 1952. On a long-range basis the FBI's figures show that major crimes in our larger cities have increased nearly 40% above the 1937-39 pre-World War II average. Since the population of these cities increased only 16.2% between 1940 and 1950, it is evident that the incidence of crime is growing far faster than our population.

The problem is a serious one and merits attention from public safety officials, mayors, and city councilors. Police Commissioner Francis W. R. Adams of New York City recently placed the increasing city crime problem squarely before the people of the nation's largest city in a frank radio broadcast.

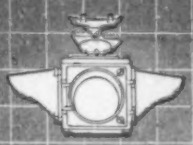
Citing the number of crimes that statistics indicated were likely to be carried out while he was talking, Commissioner Adams called for large manpower increases in the police department staff as the principal way of reversing the alarming upward crime trend. Here are some of the anticrime techniques being used in other large cities:

—In Cleveland, a county-wide network of two-way teletype has been set up linking city and sheriff's police with those of nine suburban centers. It sets in motion what is reportedly the first combined city and county-wide crime prevention and detection project of its kind.

—Chicago and St. Louis have curfew laws requiring unescorted juveniles to be off city streets by specified evening deadlines. Chicago attributes a 33% decline in juvenile delinquency court cases since January 1 to a strict enforcement of their curfew law.

—Chemical tests for measuring the degree of intoxication of drivers arrested for drunken driving have proved to be effective in Milwaukee, Detroit, Minneapolis, and Chicago.

AUTOFLOW



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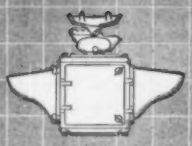

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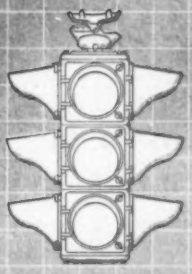

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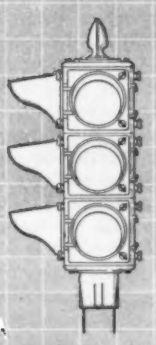

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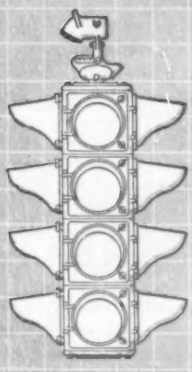

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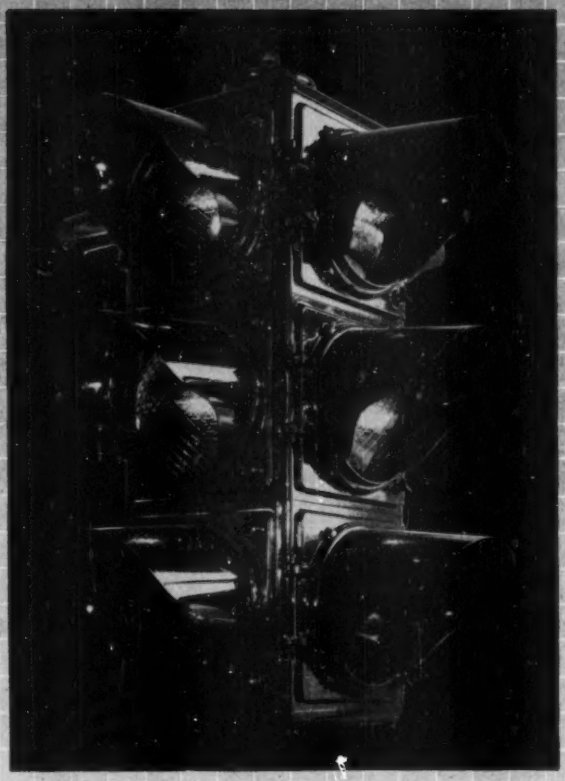


One simple, compact, well-constructed unit is the basis for all AUTOFLOW fixed-face traffic signals. Merely varying the number of sections or faces adapts AUTOFLOW signals to suit any application requiring fixed-face equipment. All parts are interchangeable, and all minor repairs, replacements or adjustments require only simple tools.

AUTOFLOW simplicity and versatility are still your keys to adequate traffic control without extravagance in either initial cost or maintenance.

SOUTHERN Signals INC.

222 BEACH STREET • P. O. BOX 1303 • SHREVEPORT, LOUISIANA

Get What You Want—No Charge!

To obtain any of the following catalogs, write directly to the manufacturers. If you prefer, you may circle the identifying numbers on this coupon and mail to THE AMERICAN CITY, *470 Fourth Avenue, New York 16, New York, or use the colored Post Card at page* 234.

289	295	301	307	313	319	325	331	337	343	349
290	296	302	308	314	320	326	332	338	344	350
291	297	303	309	315	321	327	333	339	345	351
292	298	304	310	316	322	328	334	340	346	352
293	299	305	311	317	323	329	335	341	347	353
294	300	306	312	318	324	330	336	342	348	354

Name ..... **Position** .....

Address .....

Protects Sewer Pipe

289 The INERTOL CO., INC., suggests this simple, economical way to assure maximum sewage flow: Spray or brush Inertol protective coatings on the interior surface of your sewer pipe. These coatings, all cold-applied, will increase the efficiency of sewer pipe by avoiding costly seepage and retarding inside diameter shrinkage. For a full description of the various coatings and where to use them, address the company at 485 FRELINGHUYSEN AVE., NEWARK, N. J.

Paving Breakers

290 The paving breakers offered by this company have been cadmium-plated inside and out to prevent rust, corrosion and scoring, and are lubricated automatically by a throttle movement which sends a shot of oil to all working parts. They operate with less jarring, reducing operator fatigue. Minimum maintenance is required and replacement is facilitated by interchangeable parts. Write the JOY MFG. CO., OLIVER BLDG., PITTSBURGH 22, PA.

Home Incinerator Unit Ends Garbage Problems

291 A good way to cut refuse collection costs and, at the same time, eliminate the need for garbage cans, is to approve the use of automatic home disposals in your community. Calcinator disposals operate on gas or electricity, and can be installed wherever a suitable flue is accessible. They dispose of garbage and other burnable trash at its source, leaving only cans and bottles for the pick-up truck. Write the CALCINATOR CORP., 28th and WATER STS., BAY CITY, MICH.

Measures Air Pollution Automatically

292 On the job 24 hours a day, the A.I.S.I. Automatic Smoke Sampler measures air pollution automatically, recording the measurements at regular intervals of ½, 1 or 2 hours. Because the samplers are inexpensive, it is practical to locate a large number of them for complete coverage of a geographical area. Moreover, the units are so quiet, they can be safely located near residences. For detailed literature, write the RESEARCH APPLIANCE CO., BOX 463, WEST VIEW RD., PITTSBURGH 9, PA.

Pulverizes Leaves Into Fine Chaff

293 One of the best ways to speed up leaf removal is to eliminate the time-consuming jobs of hand-raking, gathering and burning the leaves. You can do this with a Turbo Jet power leaf mill. The Turbo Jet picks up the leaves, pulverizes them into a fine chaff, and returns them to the ground as a valuable mulch. It can clear leaves in swaths up to 10 feet wide, and will remove them from around fences, curbs, walls and shrubbery. Write the TURBO JET MFG. CO., 22 BOWMAN TERRACE, CINCINNATI 29, OHIO.

Chain Link Fencing

294 Protect public parks, swimming pools and equipment areas with rust-proof aluminum chain link fencing. Unlike ordinary fence, Nichols fencing requires no painting, completely eliminating maintenance costs. It is fully described in a new brochure from DEPT. ACM, NICHOLS WIRE & ALUMINUM CO., DAVENPORT, IOWA.

New A.C. Generator, Regulator and Rectifier

295 Municipal vehicles featuring 2-way radios, floodlights or other extra electrical units, may be equipped with a new a.c.-d.c. charging system with output ranging from 30-40 amperes at curb idle and up to 90 amperes at higher engine speeds. The system includes an a.c. generator, matching regulator, and a dependable dry-plate rectifier. The rectifier converts generator a.c. output to direct current. Write DELCO–REMY DIV., GENERAL MOTORS CORP., ANDERSON, IND.

Front-End Loader For City Work

296 Those special qualities that a city maintenance crew needs are all built into the new Model HRC Payloader. The bucket has a one-yard struck load and will hold a third more when heaped. It has a 4-wheel drive, torque converter, 4-speed full reversing transmission, power steering, hydraulic brakes, quick tip-back bucket, and automatic bucket positioning. For the full story on the new HRC Payloader, write THE FRANK G. HOUGH CO., 710 SUNNYSIDE AVE., LIBERTYVILLE, ILL.

Saving on Public Liability Insurance

297 The cities of New Haven and Norwalk, Conn., handle their liability insurance, including sidewalk liability, under a particularly economical plan devised by ROBERT F. COLEMAN, 79 JOHN ST., NEW YORK, N. Y. Cities and counties are invited to write the firm for folder and information.

New Snow Plows

298 THE BAKER MFG. CO., SPRINGFIELD, ILL., has developed a number of new snow-plow attachments for the Allis-Chalmers line of motor graders and industrial wheel tractors. The plows are available with hand hydraulic, power hydraulic, scarifier or mechanical lifts, and feature wing extensions and section tripping blade design. They are described in *Bulletin No. 1060.*

New Street-Name Signs Won't Break or Rust

299 The MUNICIPAL STREET SIGN CO., INC., has developed a lightweight porcelain on aluminum street-sign plate that is rustproof and, when bent out of shape, can be returned to its original position without cracking the porcelain finish. For literature describing the new sign plate, address the company at 777-9 MEEKER AVE., BROOKLYN 22, N. Y.

Traffic Cones

300 During emergency street repair or the traffic rush hour, these rubber Safe-T-Cones can be depended upon to guide traffic safely through congested areas. Safe-T-Cones are made by the RADIATOR SPECIALTY CO, CHARLOTTE, N. C. They are available in 18- and 28-inch sizes, painted or reflectorized.

Flashers for Signals

301 Flashers can be obtained for converting any traffic sign into an active warning signal. Time-O-Matic flashers are for traffic islands, caution signals and detours. They are available with standard meter case or with jack-mounting panel. For details, write TIME-O-MATIC CO., 1108 BAHLS ST., DANVILLE, ILL.

(Please turn to page 31 for more Bulletins)

"Before I saw an American Meter, I never thought a water meter would be so simple"

"I'll admit I was pretty skeptical when the Buffalo Meter Co. representative wanted to take an American Meter apart on my desk. But he disassembled it, put it together and then let me do it. It took only a minute! I'd never seen a water meter so simple, with so few parts, such easy assembly.

"We placed our first order after I found out that parts are completely interchangeable on brand-new meters or ones thirty years old. When I think of the savings we'll make in repairs alone, I'm sorry we didn't install AMERICAN METERS years ago."

• Full information available upon request.

BUFFALO METER CO.

2902 Main Street, Buffalo 14, N. Y.

Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 29

Combination Tractor Sweeper Clears Snow, Too

302 During winter months use the M-B tractor sweeper to clear snow from streets, roads, and parking areas. In spring, summer and autumn use it to sweep streets clean of leaves and other debris. When not in use as a sweeper, the tractor may be utilized for general drawbar work and other odd jobs. M-B sweepers are designed for Ford, Case, Ferguson, Minneapolis-Moline, International Harvester, and John Deere tractors. They are described in literature from the M-B CORP., NEW HOLSTEIN, WIS.

How to Use Sewage Digester Gas

303 Sewage disposal plants utilizing the digester gas will save your city money, reports this company. A 20-page booklet is available showing how Rockwell water and gas meters, valves and gas regulators will help you to use this inexpensive fuel effectively. Write the METER and VALVE DIV., ROCKWELL MFG. CO., 400 N. LEXINGTON AVE., PITTSBURGH 8, PA.

Identify Your Rolling Equipment

304 Mark your trucks and other municipal equipment with easy-to-apply trucksign transfers, available in any shape or number of colors. The transfers are made in sizes up to 20 x 30 inches for application on smooth surfaces such as door or truck panels. They are described in literature from WARD'S TRUCKSIGN TRANSFERS, 8504 LYNDON AVE., DETROIT 38, MICH.

Meters Aid in Water Conservation

305 By measuring water usage precisely, Badger meters will help eliminate water waste in your community. Moreover, these dependable units raise city revenues, assuring a self-supporting water department. Write the BADGER METER MFG. CO., MILWAUKEE 45, WIS.

This Pressure Pipe Has No Weak Spots

306 You can be sure of getting the best when you install Price pressure pipe in your water- or sewage-works system. The pipe you want needs long life, great strength, and sustained high carrying capacity. The service experience at Louisville, Ky.; Cleveland, Ohio; Miami, Fla.; Rochester, N. Y.; and many other cities, demonstrates that you get it when Price is your supplier. How Price pressure pipe can answer your particular water and sewerage problems is explained in literature from PRICE BROTHERS CO., 1817 E. MONUMENT AVE., DAYTON 1, OHIO.

Improved Sewer Cleaning

307 Sewer cleaning machines, pipe cleaning equipment, and a variety of sewer and conduit rods, are described in literature from W. H. STEWART, INC., P. O. BOX 767, SYRACUSE, N. Y. Featured is a new emergency kit for opening stoppages and removing roots. Also braces, guide wheels, and nine useful sewer drag tools.

Zinc Anodes Protect Water Heaters

308 The presence of McRay zinc anodes in your water-heater system helps remove dissolved gases, reducing the rate of corrosion. These anodes will not create gas or odor. Where a water softener is used, they will not reharden the water and, when used in boosters, they are able to withstand the higher water temperatures. Facts about McRay zinc anodes are presented in literature from McRAY PRODUCTS of CALIFORNIA, 6808 MELROSE AVE., LOS ANGELES 38, CALIF.

Smooth the Path To Better Water

309 Whether your water treatment problem is one of alkalinity control, removing iron rust, taste and odor or demineralization, the General Filter Co. will help you solve it. The firm has an extensive case history file covering thousands of installations, any one of which may apply to your particular water conditioning problem. For all the facts, address the GENERAL FILTER CO., DEPT. AC-10, AMES, IOWA.

Park, Playground and Swimming Pool Equipment

310 Included in this company's line of equipment are sturdy combination swing-slide and see-saw outfits for public playgrounds, heavy-duty park benches, portable and stationery picnic grills, and official regulation one-meter diving boards. Literature describing these units may be obtained from the AMERICAN PLAYGROUND DEVICE CO., ANDERSON, IND.

Fire Hydrants

311 A full description of the Rensselaer Corey fire hydrant, complete with sections on installation, servicing, spare parts and extensions, is contained in *Bulletin No. G* from the RENSSELAER VALVE CO., TROY, N. Y. The new bulletin includes illustrated data on the "O" Ring Seal, and mechanical joint ends designed for centrifugal cast, cast-iron pipe and 150 Transite pipe.

New Diesel-Powered Crawler Tractors

312 An interesting booklet, *FACTS . . . on a New Breed of Tractors*, brings the city official an inside view of the operational methods and specific advantages of four Allis-Chalmers crawler tractors. The tractors are illustrated on actual job location, and complete specifications are given for each model. For a free copy, address ALLIS-CHALMERS MFG. CO., TRACTOR DIV., MILWAUKEE 1, WIS.

Quick-Drying Traffic Paint

313 Especially developed for painting center lines on congested, downtown streets, Prismo Municipal LifeLine dries quickly, minimizing traffic tie-ups. The new reflectorized striping material provides 24-hour visibility in all kinds of weather. It is described along with reflective products for direct "spray-on sign reflectorization," and equipment for pavement and sign marking, in literature from the PRISMO SAFETY CORP., HUNTINGDON, PA.

Portable Dryer Expedites Street Maintenance

314 Where street maintenance jobs require dried or heated aggregates, use the new Hetherington and Berner portable dryer. Designed for use with the firm's Moto-Patcher, the unit may be operated independently or with other machines as well. The drum is 8 feet long and 30 inches in diameter, with a drying capacity up to 10 tons per hour. For *Bulletin MPD-53*, write HETHERINGTON and BERNER INC., 701 KENTUCKY AVE., INDIANAPOLIS 7, IND.

Street Lighting Standards and Brackets

315 Painting and maintenance costs are eliminated with new Hapco aluminum-alloy, street-lighting standards and brackets. Hapco poles are of one piece construction with uniform wall thickness throughout. Large diameter poles with greater weight for corner locations are similar in design to regular size units. For details on this modern street-lighting system, write HUBBARD ALUMINUM PRODUCTS CO., 6301 BUTLER ST., PITTSBURGH 1, PA.

Protects Asphalt Pavements

316 A solvent-resistant coating originally developed to protect airport refueling areas, parking ramps, and taxiways from the effects of jet fuels and other petroleum products, is recommended for other asphalt pavements as well. Colfix Jet Seal is simple to apply, and protects the pavement against heat, wear and weather. A coal-tar base-seal, it is made by the AMERICAN BITUMULS & ASPHALT CO., 200 BUSH ST., SAN FRANCISCO 4, CALIF.

Curbs Auto Speeders

317 A good way to reduce excessive speeding is with Speed Watch, an electrical timing system developed by TRAFFIC HOUSE, INC., 202 NATIONAL BANK BLDG., DECATUR, ILL. Used to "clock" speeders, the new system is easily set up and operated by one traffic officer, relieving the spare man for reassignment. It is fully described in *Speed Watch Folder No. 16*, available on request.

Quickly Erected Bleachers

318 If your city is planning an outdoor function that requires immediate seating facilities, get all the facts on Reeves' bleachers. These portable units provide quick, safe, comfortable seating for school games and concerts. Also available are Reeves' permanent prefab grandstands, for seating larger numbers. Write REEVES STEEL, INC., 112 S. 12th ST., TAMPA 2, FLA.

Office Copying Machine

319 Three or more copies of a letter or other office document in one minute for only a few cents each are made by the Kodak Verifax Printer, a new office copying machine developed by the RECORDAK CORP., 444 MADISON AVE., NEW YORK 22, N. Y. It can be operated in full room light; no special skill and only a few minutes' instruction being required on the part of the operator.

(Please turn to page 32 for more Bulletins)

TOWER ALL STEEL

Swimming Pools

Tower Swim Pools for outdoor or indoor installation are modern in design and scientifically constructed. A positive guarantee is provided against leaking, cracking or structural defect — the first cost is in effect a final cost. Most important — only an occasional coat of paint is required to maintain a Tower All Steel Pool.

HOTELS, SCHOOLS, PLAYGROUNDS, INSTITUTIONS, COUNTRY CLUBS.

Consult us today!

TOWER IRON WORKS

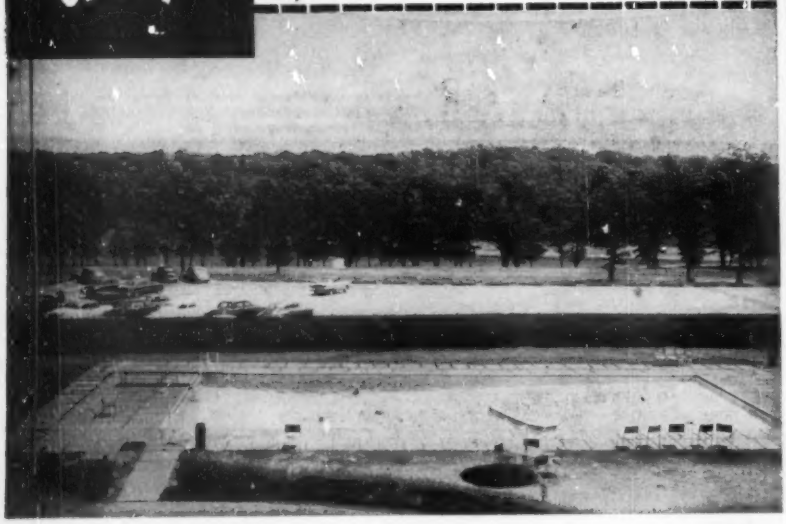
60 BORDEN ST., PROVIDENCE 3, R. I.

Please send information on your New ALL STEEL Swimming Pools.

Name

Street and No.

City and State



Catalogs for You

Write directly to the manufacturers or use coupon on page 29

Embossed Street Signs Of Porcelain Enamel

320 You can mark city streets clearly and permanently with new porcelain enamel embossed street-name signs that do not fade, rust, chalk or stain. Ferro street signs combine clean, modern styling with a permanent finish, and are instantly visible at all hours. They are available in two sizes and a variety of mountings. Write the FERRO ENAMELING CO., 1100 FIFTY-SEVENTH AVE., OAKLAND 21, CALIF.

Paints Center Lines, Crosswalks Quickly

321 Using the spray-gun method, the Mark-Rite Econo-Liner will paint from 10 to 15,000 feet of line per minute on concrete, black top or any other surface. The unit will paint straight, curved, continuous or skip lines, 2 to 6 inches wide. It incorporates a 4 cubic foot per minute compressor, and a 5-gallon capacity tank. For additional data, write the UNIVERSAL MFG. & SALES CO., 5211 PACIFIC BLVD., HUNTINGTON PARK, CALIF.

Meets All Your Sewer Requirements

322 Your sewer problem is easily solved with Armco corrugated metal pipe. The company provides six types of long-lasting sewer pipe, each designed for easy handling, fast assembly, and low-cost installation. Send for a new booklet which will help you choose the right type of sewer structure for your particular problem. Write ARMCO DRAINAGE & METAL PRODUCTS, INC., MIDDLETOWN, OHIO.

Improved Sewage Treatment For the Small Community

323 Communities serving from 1,000 to 2,000 inhabitants are offered a complete package sewage-treatment plant that is inexpensive to construct and economical to operate. The Walker Process Package Plant utilizes the activated sludge process for primary settling, digestion, aeration and final settling. It is discussed in *Bulletin No. 22879* from WALKER PROCESS EQUIPMENT INC., AURORA, ILL.

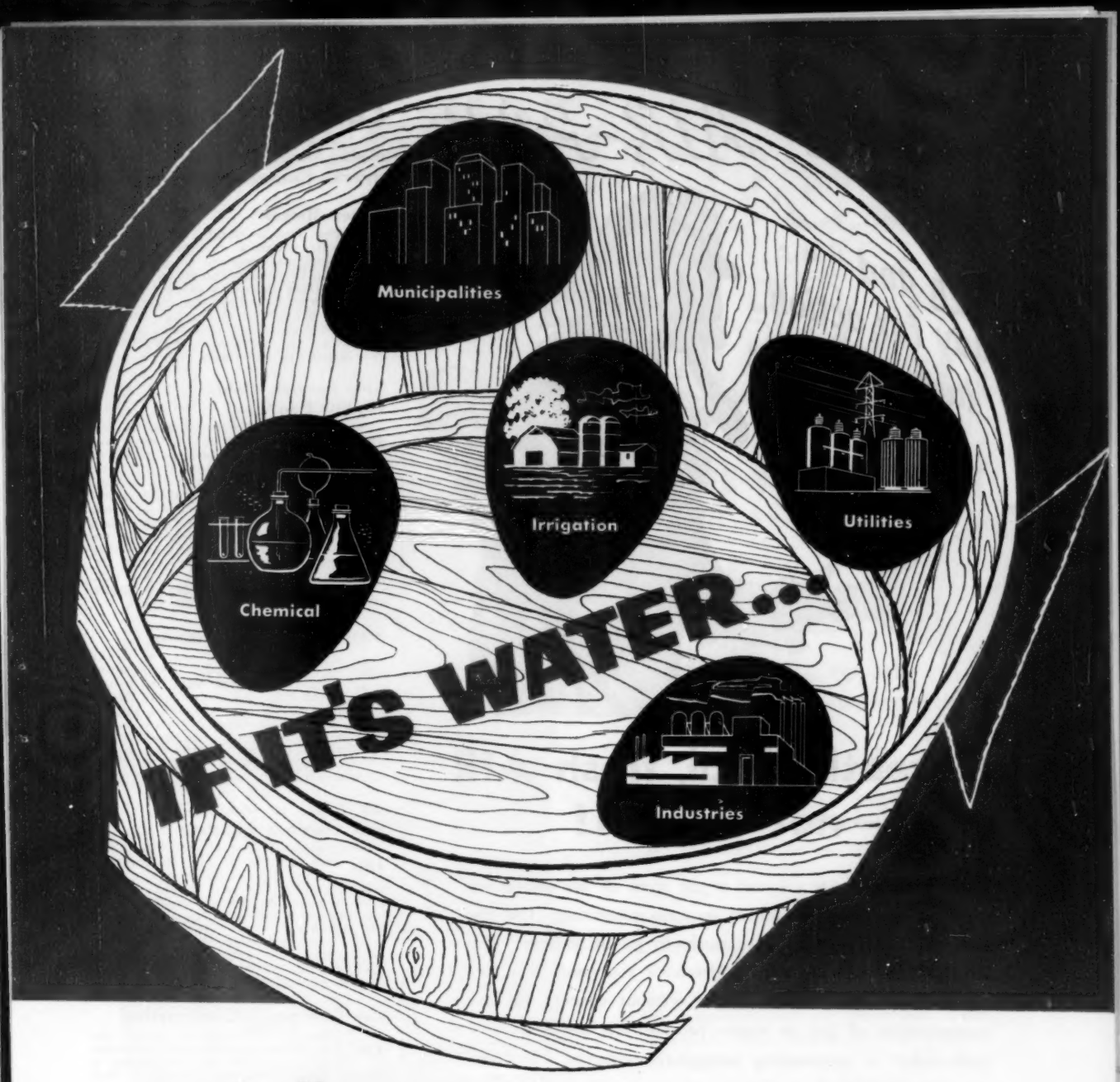
Steel Grating and Stair Treads

324 Weldforged steel grating and stair treads are protected by bonderite for rust resistance and to provide a good surface for painting. Grating is with square or continuous spiral crossbars and serrated for non-slip safety. For the illustrated booklet, *14-R*, write KERRIGAN IRON WORKS, INC., NASHVILLE, TENN.

Water-Works Pipeline Equipment

325 Water department officials should benefit from this comprehensive new catalog featuring descriptions, specifications and prices of a complete line of water-works supplies and specialties. Included in *General Catalog No. 5* are data on pipe repair clamps, service clamps, flexible couplings, and other special pipeline fittings. Write SMITH-BLAIR INC., SOUTH SAN FRANCISCO, CALIF.

(See page 34 for more Bulletins)



.... put all your eggs in one basket!

Whether it's water for municipality—industry—or farm, divided responsibility is dangerous. Put your eggs, all your eggs in one basket. Layne—the world's largest developer of ground water resources—offers a service that is truly unique. From preliminary exploration through well drilling to installation of equipment, you do business with one organization that assumes complete and undivided responsibility for the finished system. Wise men know that on any question that relates to water—it's good business sense to talk first to Layne.

LAYNE & BOWLER, INC.
Memphis 8, Tennessee

Layne Associate Companies Throughout the World

Water Wells • Vertical Turbine Pumps • Water Treatment

Scott AIR-PAK

...breathe cool, fresh AIR — not oxygen!

Don't waste valuable minutes at the scene of the emergency for your breathing equipment to start generating. Use the Scott AIR-PAK and you are ready to go in seconds. The AIR-PAK supplies all the cool, fresh air you need. You can go directly to the trouble source without concern for the concentration of gas or vapor because you are absolutely independent of surrounding atmosphere with the AIR-PAK.

No complicated training or practice is necessary. Cool air operation prevents fogging. Using air instead of oxygen inspires confidence in the most inflammable atmosphere. Clear, convenient gage assures dependable check on air supply.

If you would like more information on the world's safest self-contained breathing equipment write today!

SINCE 1932 Scott FOR SAFETY - FOR SERVICE

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

191 ERIE STREET LANCASTER, N. Y.

Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 15 West 57th Street, New York 19, New York

Catalogs for You

Write directly to the manufacturers or use coupon on page 29

Water Meters

326 The simple design of American water meters facilitates maintenance, reducing the need for meter repairmen. Even when the meter is frozen, only the frost bottom is affected. All internal parts, including the gear train, avoid ice damage by separating. Detailed information on American meters is available from the BUFFALO METER CO., 2902 MAIN ST., BUFFALO 14, N. Y.

New Derrick Holds 12,000 Pounds

327 This new 12,000-pound-capacity derrick handles 70-foot poles with ease and loads 5,000 pounds inside of the body. It is designed with a new erecting mechanism featuring positive linkage and sensitive, insulated controls. An operating range of 195° permits a 5-foot ground height for threading the winch line through the derrick head. For detailed information on the new Series 3700 Model "HL" derrick, write the J. H. HOLAN CORP., 4100 W. 150th ST., CLEVELAND 11, OHIO. Request *Bulletin No. 154.*

Simplifies Sewer Cleaning

328 Sewer cleaning is easy with the new O K Champion power sewer cleaner. Mounted on a four-wheel chassis, the unit does away with lifting over the manhole, and eliminates pulling away during operations. It features a built-in gear reduction ratio, and a fully automatic safety clutch. Write the CHAMPION CORP., 4716 SHEFFIELD AVE., HAMMOND, IND.

All Types of Indoor and Outdoor Lighting

329 A complete line of indoor and outdoor lighting products to meet all of your city's lighting requirements is described in this new Revere catalog. There are sections devoted to street lighting luminaires and poles, airport lighting and floodlights, and others discussing hinged and rigid poles, cluster lights and Pylon-Lites. For your copy, write the REVERE ELECTRIC MFG. CO., 6009 BROADWAY, CHICAGO 40, ILL.

Low-Cost Street Construction

330 An economical way to spread aggregate for low-cost street construction is to use the new Model C "Quick Action" material spreader. This dependable unit operates without gears, motors or complicated mechanical parts, minimizing the time lost on maintenance and repair. It is made by the WAUSAU IRON WORKS, WAUSAU, WIS.

Traffic Signals For Changing Needs

331 A folder of functional and equipment data on Autoflow traffic signals and controllers is now available. Autoflow Model 102 synchronous controls are described in three modifications: 102S, single dial, 6 circuits; 102L, non-expansible single dial, 6-18 circuits; 102L, expansible with 1-3 timers, 6-16 circuits. The standard features and the extras available for each type are listed. Write for a free copy of *Autoflow Traffic Signal Controllers* to SOUTHERN SIGNALS INC., 222 BEACH ST., BOX 1303, SHREVEPORT, LA. Request *Bulletin No. 5406* and *Autoflow Traffic Signal Bulletin No. 5310.*

(See p. 203 for more Bulletins)

Eliminate EROSION AND SEEPAGE

SAVE YOUR WATER WITH FIELD-PROVED

Gulf-Seal

© PREFABRICATED ASPHALT LINING

First among all asphalt linings, uniquely distinguished by more than three million square feet now in use, GULF-SEAL Prefabricated exposed-type Asphalt Linings are increasingly being specified by engineers and municipal officials for use in seepage and erosion control campaigns on canals, reservoirs and waterways.

In this single material are engineered very substantial advantages of long, dependable life, low initial cost and unparalleled ease of installation—all of which are documented through installations in many different sections of the nation.

Our Engineering Brochure contains a great deal of original material, useful in the evaluation of these linings. We would be happy to send you your copy on request.

COMPLETE TECHNICAL DATA

is conveniently available in our Engineering Brochure. May we send you your copy?

GULF SEAL CORPORATION

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INVADER 750 G.P.M. PUMPER, OPEN CAB

There you will see the AMERICAN-LAFRANCE *Extra Value* Pumper for superior performance,

AMERICAN-LAFRANCE pumpers give you 14 Extra Values . . . exclusive "built-in" features . . . for outstanding dependability. Visit our Space #1 and see for yourself how these Extra Values make American LaFrance the World's Finest Fire Engine.

Pumpers are available in all standard rated capacities, Class A and B, triple combination or as quadruple combination with a full complement of ground ladders.

AMERICAN-LAFRANCE
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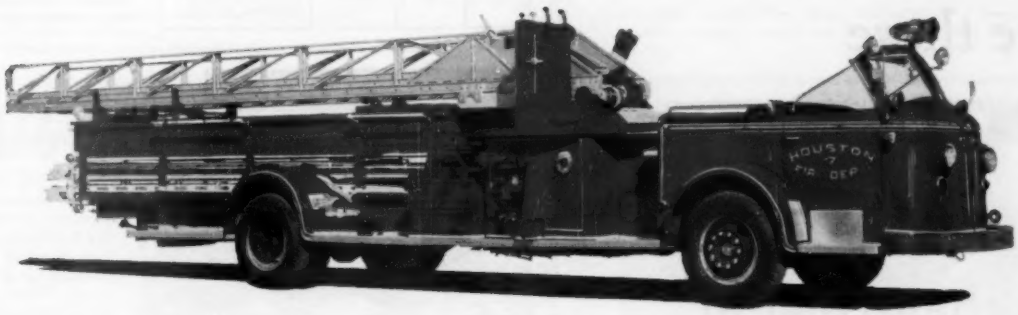
our exhibit at the Conference....



4 WHEEL 85 FT. AERIAL

and the AMERICAN-LAFRANCE All-Steel Aerial for greater safety and longer operating life.

Sixteen Extra Values in American LaFrance all-steel aerial ladder trucks give you maximum performance and safety under all operating conditions. You can see these outstanding features when you visit our Space #2.

American LaFrance all-steel aerial ladders are available in four lengths: 65 ft., 75 ft., 85 ft., and 100 ft. Cab-ahead-of-engine design for greater visibility, easier steering and shorter turns.

• Get your FREE copy of the *NEW, REVISED EXTRA VALUE booklet . . . WRITE TODAY!*

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO 9, ONTARIO, CANADA

MR. PUBLIC OFFICIAL:

We want you to have these UP-TO-DATE FACTS on the growing line of Allis-Chalmers equipment

Ask your nearby Allis-Chalmers dealer to demonstrate any of these budget-stretching machines

MOTOR GRADERS

for heavy-duty grading .

Model	Brake Hp	Weight, lb	Speeds, mph
AD-40	104	23,000	6 forward to 20.4 3 reverse to 7.0
AD-30	78	22,700	6 forward to 20.4 3 reverse to 7.0
D	50	8,800	4 forward to 25.6 reverse to 3.3

Famous ROLL-AWAY moldboard, high axle and throat clearance give Allis-Chalmers AD motor graders added capacity for BIG output. Tops for service simplicity, convenience.

CRAWLER TRACTORS

for sanitary refuse disposal .

Tractor	Drawbar Horsepower	Weight, lb	Speeds, mph
HD-5	40	11,250	5 forward to 5.5 rev. 2.0
HD-9	72	18,800	6 forward to 5.7 3 rev. to 4.4
HD-15*	109	27,850	6 forward to 5.8 3 rev. to 4.5
HD-20	175**	41,000	3 forward to 7.0 rev. to 5.5

Allis-Chalmers Tractor Shovels are made to order for the popular sanitary landfill method of garbage and refuse disposal. They can do the complete job . . . excavate trenches, spread and compact refuse, apply an even cover of dirt fill. Many features add to their cost-cutting work capacity. Other attachments replace bucket to keep unit busy on other jobs all year long.

**Net engine hp—torque converter drive
*Also available with torque converter drive—135 net engine hp

MOTOR SCRAPERS

Motor Scraper	Hp	Capacity — struck yd	Speeds, mph
TS-300	280	14	4 forward to 22.5 rev. 3.5
TS-200	176	10	5 forward to 21.6 rev. 2.5
Motor Wagon	**Hp**	**Capacity, struck yd**	**Speeds, mph**
TW-300	280	14	4 forward to 22.5 rev. 3.5
TR-200	176	11	5 forward to 21.6 rev. 2.5

Allis-Chalmers Motor Scrapers are job-tested and job-proved. They provide a means of moving large quantities of material fast and economically — feature highest horsepower per struck yard of capacity, high speed. Let your Allis-Chalmers dealer show you one at work. Compare it feature for feature, yard for yard and dollar for dollar with any other machine in its class.

. . . . construction, maintenance . . . all-around work

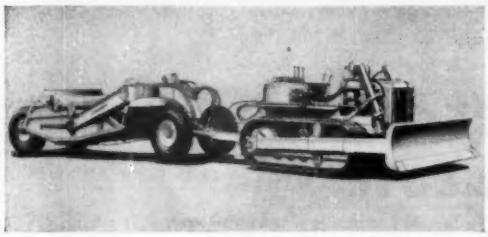
Safe, quick, one-pass shoulder maintenance with Model D and maintainer attachment.

The handy Model D grader—first low-cost machine to offer tandem drive, single member tubular main frame and the ROLL-AWAY moldboard. Interchangeable attachments make it usable all year: rear-end loader and shoulder maintainer, scarifier, both blade and V-type snowplows. With all its features, the Model D cost is still only one-third that of a large grader.

One-man, one-machine street department — rough grades, spreads, cleans up, loads trucks with ⅝-yd loader.

SCRAPERS

. . . . earth moving . . . dozens of jobs



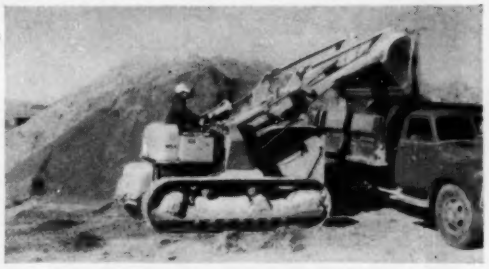
Scraper	Capacity — struck yd	Capacity — heaped yd	Weight, lb
AC-314	14	18	24,350
AC-108	8.4	11	15,250
AC-106	6.1	7.5	10,300
AC-44	4	4.7	6,595
AC-24	2	2	2,540

Four handy tractor shovels to choose from. The HD-9G, 2-yd capacity shown here, gives unmatched utility at lowest possible cost.

An Allis-Chalmers HD-5 Tractor with dozer blade plus four-yard AC-44 scraper adds up to a real dirt-moving value. Versatile enough for grading, filling, dozing, clearing and many other jobs.

Other attachments interchangeable with shovel include dozer blades, rock bucket, trench hoe, rock fork, many others.

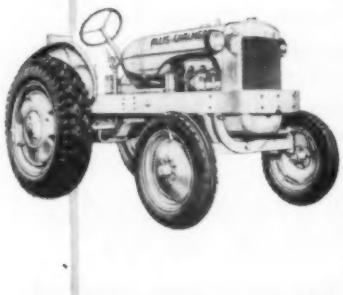
TRACTOR SHOVELS



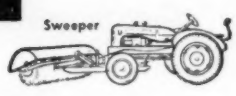
Tractor	Drawbar Horsepower	Weight	Bucket Size	Dumping Height*
HD-5G	40	16,200 lb	1¼-2 yd	9 ft, ½ in
HD-9G	72	29,900 lb	2 -3¾ yd	11 ft, 4 in
HD-15G**	135	48,030 lb	3 -5½ yd	11 ft, 7 in
HD-20G	175**	63,325 lb	4 -7 yd	12 ft, 10 in

*Height of Bucket Hinge Pin
**Net engine hp — torque converter drive

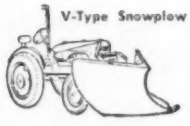
WHEEL TRACTORS



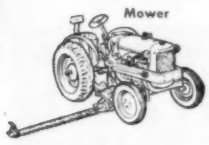
Sweeper



V-Type Snowplow



Mower



Speed handling and maintenance jobs with the IB Tractor. Highly maneuverable — only 8 ft long, 4½ ft wide, turns in 7-ft radius. Has unusual stability. Speeds up to 8.5 mph. Gasoline engine develops 18 hp. Attachments multiply usefulness.

SEND FOR YOUR COPY of "New Economy for Public Bodies" giving further information on this equipment — or see a nearby Allis-Chalmers Industrial Tractor Dealer in the well-established, nationwide organization.

ALLIS-CHALMERS
TRACTOR DIVISION—MILWAUKEE 1, U.S.A.

Please send my copy of New Economy for Public Bodies. Also send literature checked below:

- ☐ motor graders
- ☐ Model D motor grader
- ☐ tractor shovels
- ☐ crawler tractors
- ☐ motor scrapers
- ☐ wheel tractors
- ☐ have salesman call

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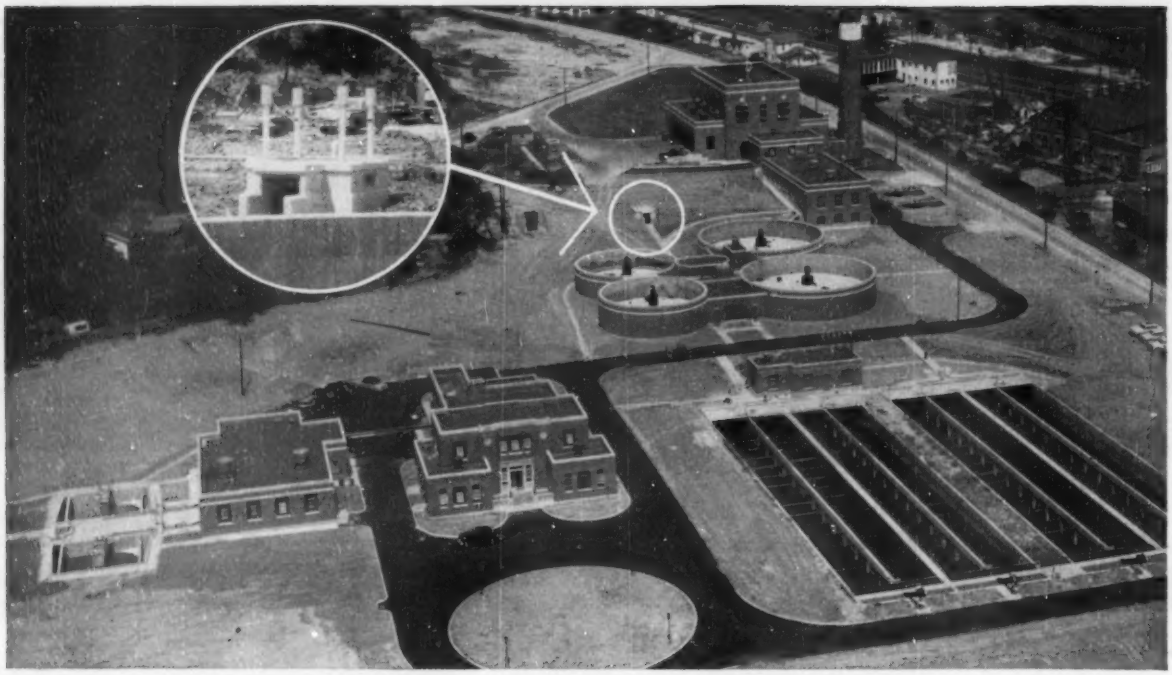
Position.....

ROLL-AWAY is an Allis-Chalmers trademark.



At Arlington County, Virginia . . .

capacity increased—operations simplified

WITH P.F.T. FLOATING COVERS

In 1953, fast growing Arlington County expanded its capacity in a *practical* way by:

(1) converting its two 50′ tanks to secondary digestors
(2) adding two 65′ tanks for primary digestion
(3) equipping all four with P.F.T. Floating Covers

The result: P.F.T. "Controlled Digestion" and a new capacity of 20,000,000 gallons per day— 4 times the capacity of its former design!

Now, in addition to increased capacity, plant procedures are *simplified* because additions and withdrawals of sludge and digestor liquor can be made independently, *at the operator's convenience.* Floating Covers simply rise or lower with additions and withdrawals—*no fixed level need be maintained.*

P.F.T. Floating Covers also reduce costly breakdowns and repairs by eliminating all moving parts inside the digestor.

With its new equipment, Arlington soon found its gas production exceeding all requirements. This excess gas is safely handled by P.F.T. gas control equipment, including four 3″ waste gas burners mounted on a separate structure as shown in the illustration above.

As an added feature of this "Controlled Digestion", each tank contains a P.F.T. Supernatant Liquor Selector for automatic, continuous withdrawal of the best digestor liquor available.

Complete information on request—write for bulletin 332.

Design of plant by / *Alexander Potter Associates, New York, NewYork*

P.F.T.

waste treatment equipment exclusively since 1893

PACIFIC FLUSH TANK CO.
4241 Ravenswood Avenue
Chicago 13, Illinois

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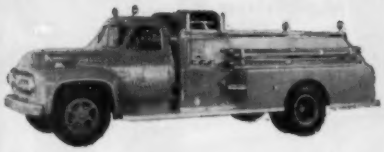


GRAND TRAVERSE COUNTY, MICHIGAN

ROCHESTER, MINNESOTA

LANSING TWP., MICHIGAN

DANA, ILLINOIS

Why are **MORE and MORE communities specifying John BEAN Fire Fighters?**

because:

1. Whatever a community's requirements, there's a John Bean Fire-Fighter to fit them exactly. John Bean equipment is designed to include either a high-pressure fog system or a volume pumping system, or both!

2. Fires are stopped faster by John Bean High-Pressure Fog — with 90% less water. The heat absorption and smothering action of John Bean high-pressure fog makes water 10 times more effective than when delivered in a conventional stream.

3. John Bean Fire-Fighters are built to take around-the-clock service. High pressure and peak volume performance at low engine speeds.

Investigate the trend in modern fire apparatus for your community. Get the full John Bean story — Today.

JOHN fmc BEAN

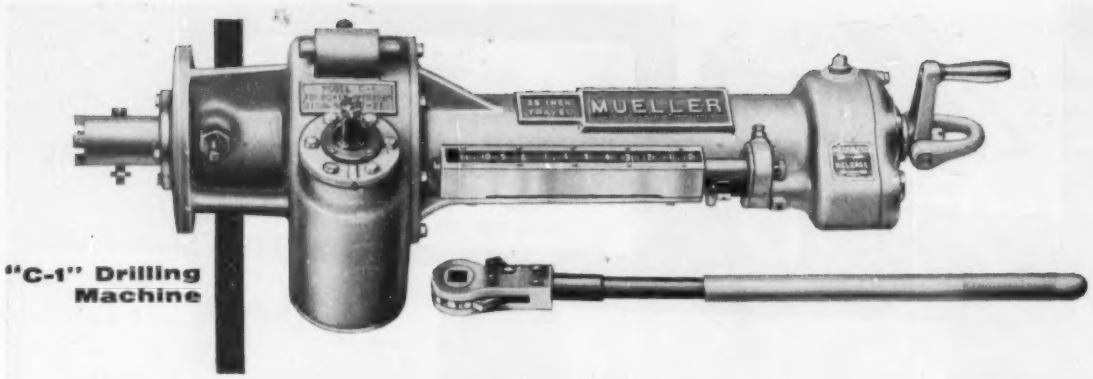
TWO-FISTED FIRE-FIGHTERS

Can be mounted on most standard truck chassis

John Bean Division
Lansing 4, Michigan

John Bean Division
San Jose 3, California

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION



"C-1" Drilling Machine

MUELLER

Proven Design Gives Versatility

Install needed valves and connect branch mains, under pressure, with a Mueller "CC" or "C-1" Drilling Machine!

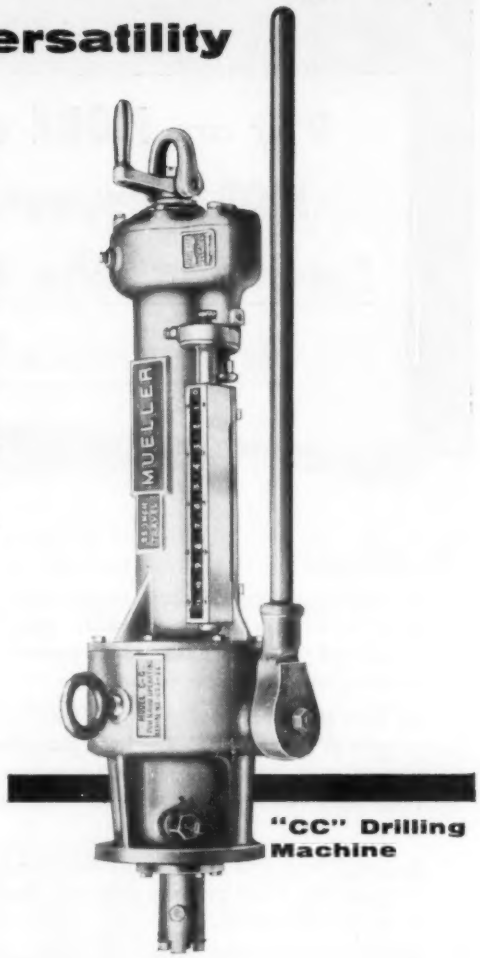
Versatility has been carefully designed into the "CC" and "C-1", permitting their use with Mueller Inserting Valves, Tapping Sleeves and Valves, Gate Valves and special fittings to perform a wide variety of water works operations.

Both machines are similar in design and construction except that the "CC" is hand operated and the "C-1" is power operated by an air motor or portable gasoline engine drive unit. They constitute part of a complete line of drilling and tapping machines designed to meet your every need.

Consult your Mueller Representative or write direct for complete information.

SPECIFICATIONS

Makes cuts 2″ through 12″
500 psi maximum working pressure at 100°F.
500°F. maximum temperature rating at 250 psi
25″ boring bar travel
Automatic or manual feed
Feed indicator standard equipment



"CC" Drilling Machine

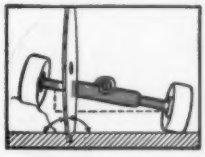
MUELLER CO.

Dependable Since 1857

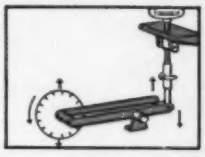
MAIN OFFICE & FACTORY DECATUR, ILLINOIS

PUT *NEW* PROFIT IN CUTTING CONCRETE!

Use Genuine CLIPPER SAWS — and CLIPPER BLADES
Perfect Combination for Joints — Trenches — Patches

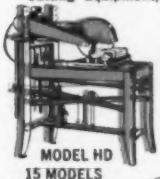


Self-Propelled . . . and powered by 25 Horsepower . . . Clipper's new C-250 "ConSawMatic" cuts the MOST concrete for the LEAST cost per foot! Exclusive 3-Point Suspension on rugged 4-wheel chassis eliminates blade binding, reduces wear. Improved Screw Feed for **positive** Depth Control, essential with new GreenCon Abrasive Blades. Easy to handle, gets you "on the line" fast, ready to cut in a hurry. FREE TRIAL will show you why "4 Out Of 5 Buy Clipper"



by the Makers of **CLIPPER MASONRY SAWS**

World's first—and finest Masonry Saw. Clipper, world's largest manufacturer of Masonry and Concrete Cutting Equipment, sets a new standard for Quality Workmanship and Tested Performance. The name Clipper Guarantees your Satisfaction!



MODEL HD
15 MODELS
Priced from $265

NOW—You Can Cut Concrete with *NEW* CLIPPER "GreenCon" ABRASIVE BLADES

Savings you never dreamed of—as high as 80% with Clipper's new "GreenCon" Blades. Reinforced Abrasive Blades that knife through green concrete with limestone aggregate. Call or write Clipper today!

NEW Diamond Blades by Clipper—cut ANY concrete. There's new ease and speed in Clipper's **improved blade specifications** . . . for cutting green, cured or aged concrete. A blade for any job—any aggregate—every saw!

Clipper PRODUCTS

SIMPLE in operation
RUGGED in construction
DEPENDABLE in performance

COAST TO COAST

- PHILADELPHIA
- ST. LOUIS
- CLEVELAND
- DETROIT
- AUSTIN, TEX.
- CHICAGO
- LOS ANGELES
- HARTFORD
- BOSTON
- HOUSTON
- MILWAUKEE
- ST. PAUL
- INDIANAPOLIS
- NEW YORK
- PITTSBURGH
- DENVER
- NEW ORLEANS
- SAN FRANCISCO
- CINCINNATI
- ATLANTA
- WASHINGTON, D.C.
- BIRMINGHAM
- CHARLOTTE, N. C.
- DALLAS
- KANSAS CITY
- SEATTLE

- Canada
- England
- France

MAIL COUPON NOW

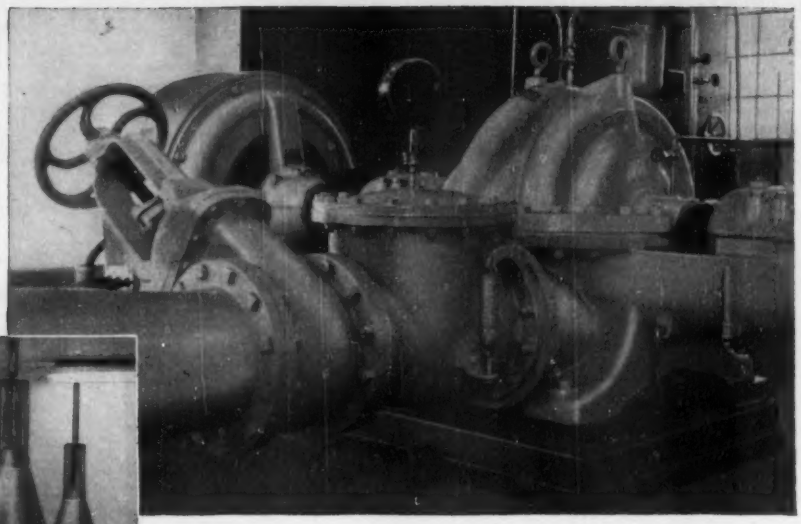
SOLD ONLY DIRECT FROM FACTORY BRANCHES

CLIPPER MANUFACTURING CO.
2813 W. Warwick, Kansas City 8, Missouri
Send FREE Literature and Prices on: 22-C

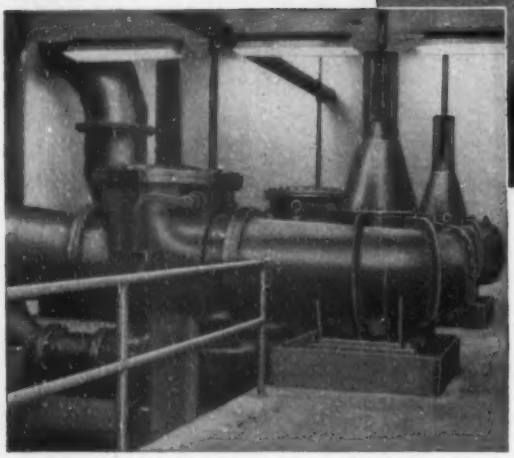
☐ CLIPPER CONSAWMATICS ☐ CLIPPER DIAMOND BLADES
☐ CLIPPER "GREENCON" BLADES ☐ CLIPPER MASONRY SAWS
☐ Can I get ConSawMatic on FREE TRAIL?

FIRM _____
ADDRESS _____
CITY _____ STATE _____

12 by 12 List 340
Check Valve
Manchester, N. H.



24 by 24 List 340
Check Valve
Salem, Oregon



Rensselaer CHECK VALVES

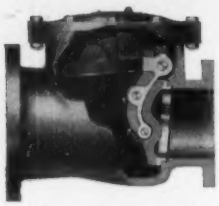
Clearway • Quiet Closing • Non-Slam

Heavy slams can cause damages of explosive proportions. Modest slams may throw piping out of alignment and cause serious leakages.

The Rensselaer non-slamming check valve illustrated is low cost permanent insurance against slamming. It is a clearway valve with the gate normally completely out of the line of flow. Head losses are low.

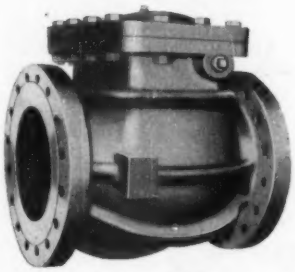
As the velocity at the pump discharge decreases on pump shut down, the lever arm and adjustable spring force the gate toward its seat. At the instant of zero velocity, the gate is on its seat and slamming has been entirely eliminated.

Rensselaer non-slamming check valves are made in sizes up to 30 by 30 inches. Standard check valves up to 60 inches for locations where slamming is not anticipated. High pressure valves up to 400 lbs. W.P. and 24". Ask for Catalog No. E. 108



Increasing type with flange ends

Check valve with hub ends



High pressure check valve

Rensselaer VALVE COMPANY, TROY, N. Y.

GATE VALVES • FIRE HYDRANTS • SQUARE BOTTOM VALVES • CHECK VALVES • AIR RELEASE VALVES

SALES REPRESENTATIVES IN PRINCIPAL CITIES

OUR INTEGRATED OPERATION PERMITS MAXIMUM CONTROL OF QUALITY

Ore and Coal Mines

Coke Ovens

Blast Furnaces

Pipe Plants

U.S. cast iron PIPE

FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE

From start to finish, our wholly integrated operation makes it possible for us to control quality at every step. Beginning with our mines, quarries and blast furnaces. Ending with our modern casting machines and laboratories.

Responsibility for quality rests squarely on the shoulders of a wholly integrated producer. He shares that responsibility with no one.

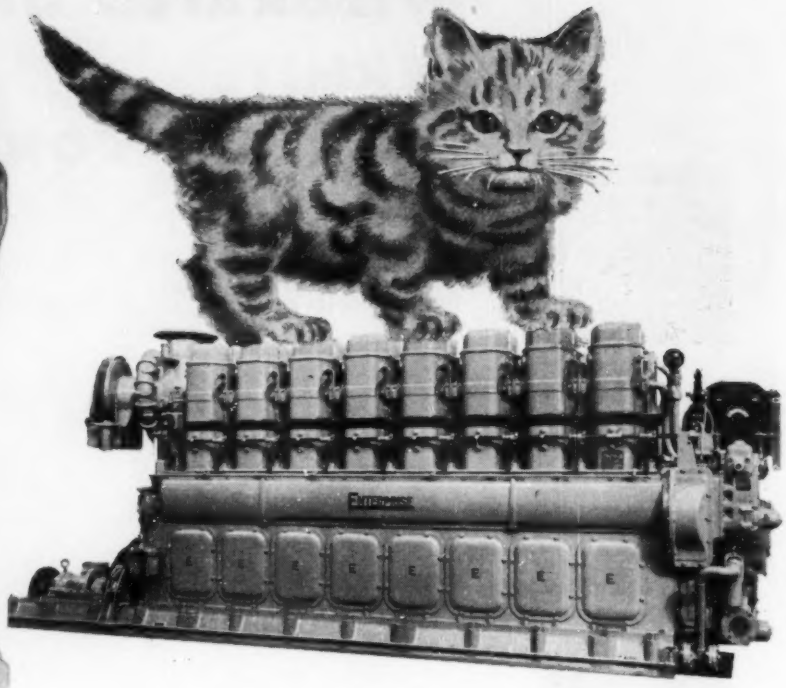
In addition to being able to control the quality of pipe-making raw materials at their sources, our Quality Control of pipe production gives further assurance to customers that the quality level of U. S. Cast Iron Pipe is in excess of standard specifications. Our pipe is produced to our own quality control specifications, more exacting than the established specifications under which cast iron pipe is normally purchased.

U. S. PIPE & FOUNDRY COMPANY

GENERAL OFFICES: BIRMINGHAM 2, ALABAMA

A wholly integrated producer . . . from mines and blast furnaces to finished pipe.

QUIET
as a kitten



ENTERPRISE has cut "Noise Level" to a minimum —all parts hum smoothly, wear longer

Enterprise has gone far in taking the head-splitting noise and damaging vibration out of diesel operation. From base to manifolds, ENTERPRISE Diesels are carefully engineered and constructed to overcome harmful vibrational effects and noise – without sacrificing any of the famous ENTERPRISE high performance features. By all comparison, the resulting smooth operation is "quiet as a kitten." A low noise and vibrational level means less wear, lower maintenance cost, higher overall efficiency and economy.

This is but another of the many plus values enjoyed by ENTERPRISE customers the world over. Get all the facts... and your choice, too, will be ENTERPRISE.

Write for descriptive bulletins, or call your nearest ENTERPRISE *Diesel Sales office.*

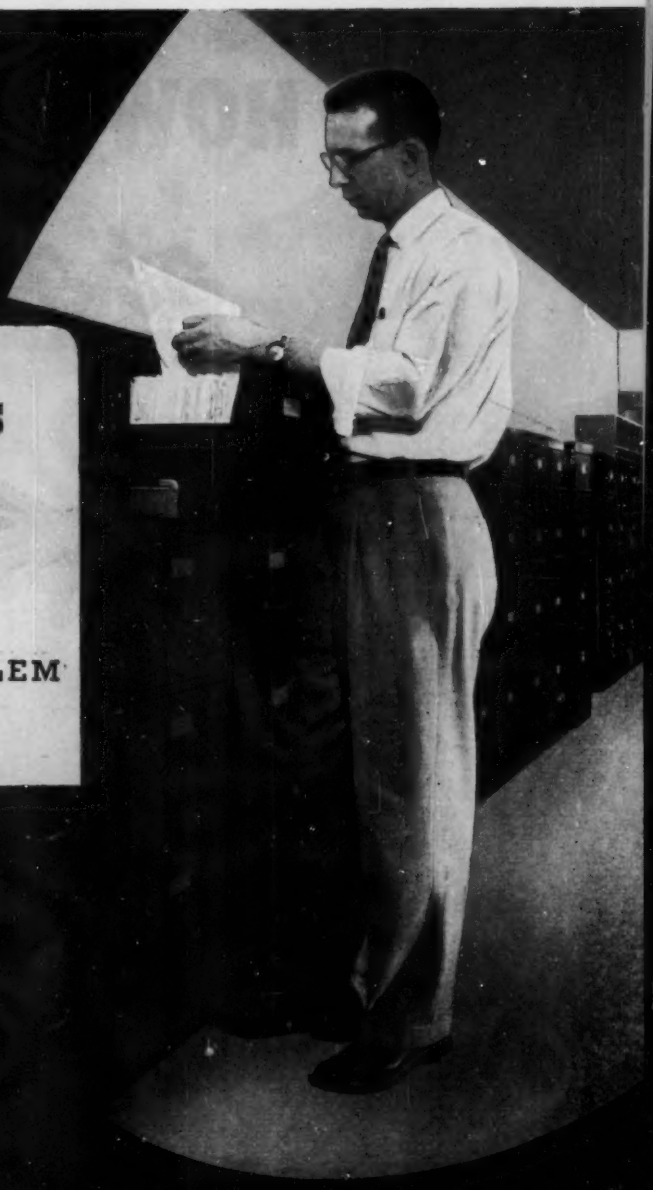
Check these points on
Enterprise Quiet-Running Diesels
Complete precision surface finishing of all moving parts to close tolerances permits accurate control of weights and balances, helps keep noise and wear to a minimum.
Conservative speed ratings result in major reduction of noise.
Carefully engineered injection system minimizes "injection knock."
Base, block, gear case and cylinder heads are of heavy-sectioned cast iron, providing a maximum damping of internal noise.
Water jacketed manifolds absorb exhaust noises.
Modern design decreases flat external surfaces which act as sounding boards.
There is nothing finer in Heavy-Duty Diesels!

Enterprise
DEPENDABLE
Diesels

ENTERPRISE ENGINE & MACHINERY CO.
18th & Florida Streets, San Francisco 10, California
A SUBSIDIARY OF GENERAL MOTORS CORPORATION

Boston · Chicago · Denver · Kansas City · Los Angeles
Minneapolis · New Orleans · New York · San Diego
San Francisco · Seattle · St. Louis · Washington, D.C.

DIESEL ENGINES • OIL BURNERS • PROCESS MACHINERY



GENERAL FILTER'S

case history files

WILL HELP YOU SOLVE

ANY *water conditioning* PROBLEM

Granted . . . no two water treatment problems are ever exactly alike. Every installation requires individual, specialized attention . . . the composition of the water, rate of flow, local conditions and desired results must all be studied before recommendations are made. However, our authentic case history files of thousands of different installations may cover many of the problems you encounter. A problem that is new to you may be old to us. Save valuable time by checking with General Filter Company first on your water treatment problems. There's no obligation and we'll be glad to give you all the help we can. Write us today!

General Filter Company

AMES, IOWA

. . . better water

write for these FREE booklets today!

GENERAL FILTER COMPANY

DEPT. AC-10, AMES, IOWA

Gentlemen: Please send us further information on the subjects checked below:

- ☐ AERATORS
- ☐ FILTERS
- ☐ TASTE AND ODOR
- ☐ ALKALINITY CONTROL
- ☐ HIGH CAPACITY RESINOUS ZEOLITE
- ☐ IRON RUST REMOVAL
- ☐ DEMINERALIZATION
- ☐ SOFTENERS
- ☐ HAVE ENGINEER CALL
- ☐ _____

NAME _____ TITLE _____

FIRM _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

HOW TO CLEAR SNOW *at a saving!*

It's Easy with the low cost FORD Tractor

CLEAR LARGE AREAS QUICKLY

Dearborn Blade Snow Plow windrows snow to right or left in a hurry. Six foot blade lifts and lowers hydraulically...attaches quickly to Dearborn Industrial Loader. End plates and skid shoes are available for special jobs.

More and more economy-minded governmental officials are finding the Ford Tractor a money-saving way to solve snow removal problems. Here are two important reasons why:

TAKES WINTER WEATHER IN STRIDE—The Ford Tractor and Dearborn Industrial Loader with Snow Bucket will load, lift and dump over ½ yard of snow at a "bite". And it does all this hydraulically at the nudge of a lever. It's highly maneuverable for work on crowded parking lots, busy streets and sidewalks. Highly versatile, too . . . rear mounted blade can be used to windrow snow, or to clean curbsides even while front mounted loader is in operation.

KEEPS BUSY ALL YEAR LONG—Snow removal is just one of the many jobs that the low cost Ford Tractor does economically. During the rest of the year you can use it for sweeping, grading, digging, loading and mowing. You can use it to maintain parks and roadsides, as well as roads and streets.

Before *your* snow problems pile up this winter, take a look at the versatile Ford Tractor. Find out how it can handle snow right now—saves you money on dozens of other jobs all year long. See your nearby Ford Tractor and Equipment Dealer or write to the address below.

Ford TRACTOR

TRACTOR AND IMPLEMENT DIVISION, FORD MOTOR COMPANY
Birmingham, Michigan

here's why

TURBO JET has revolutionized leaf removal methods

★ Gets leaves out of all sorts of "hard-to-reach" places like shrubbery, fence corners, curbs and walls—even ivy and myrtle beds!

★ "Blower" action for drying out wet leaves permits pulverizing even immediately after rain!

★ Pulverizes leaves into a fine, granulated chaff that's next to invisible on lawns or planting beds—makes excellent, valuable mulch! Notice the result of pulverizing an average bushel of leaves as shown in the photo at left.

Look at these unique features:

★ Adjustable discharge air hood permits blowing chaff wherever needed—or it can be collected and bagged automatically for other use. Chaff deposited as mulch will not blow about as will whole leaves.

★ Sturdy, light, simple to operate—no skilled operators necessary. Low maintenance and operating costs. *No cutting blades to sharpen!*

★ Chaff and dirt blown away from operator and machine—no engine damage from pesky dust. On windy days, work *with* wind for best results.

★ NOT an "attachment"—Turbo Jet is *specifically* designed to do an efficient leaf removal job!

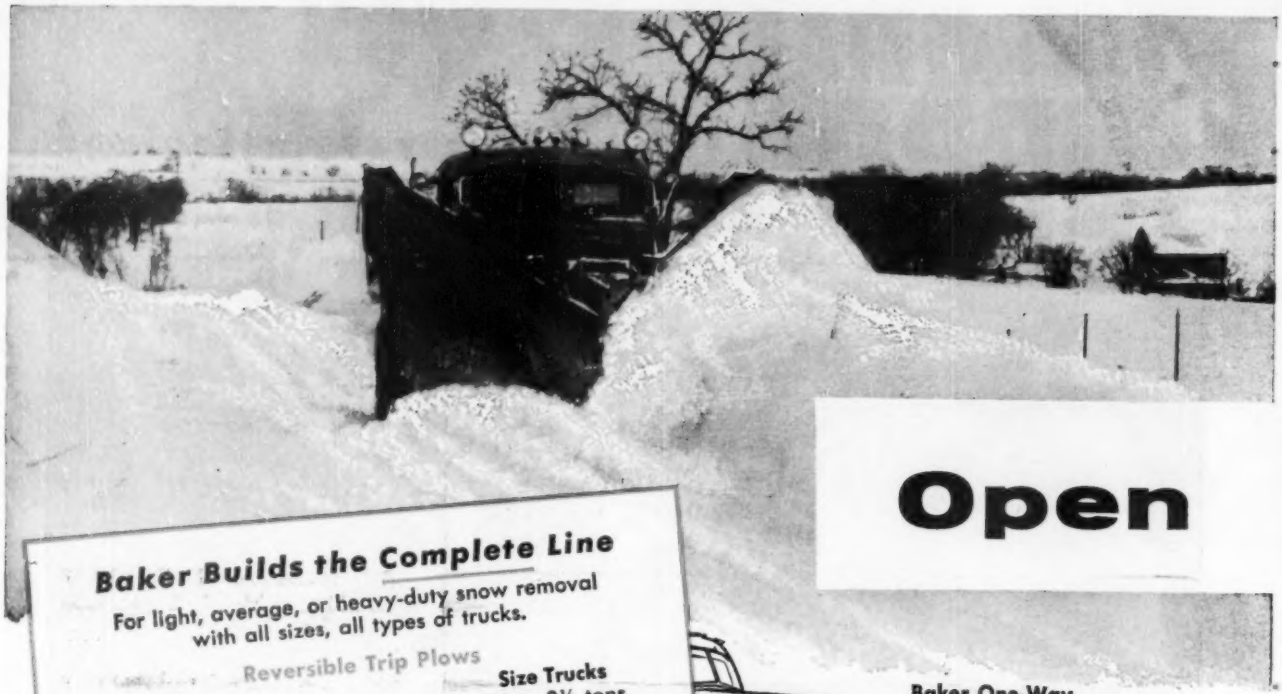
TURBO JET is more than a leaf pulverizer — Turbo Jet mechanizes the entire leaf removal task — picks up the leaves wherever they have naturally collected, returns them to the earth as a valuable, almost invisible mulch. Turbo Jet completely eliminates hand raking, gathering, burning, trucking of leaves. Through its novel "two-way action," Turbo Jet

(1) Cleans up leaves in its path through its intake opening, and

(2) Moves an even greater area of leaves into a windrow simultaneously through the blower action of its discharge air stream, enabling the operator to clear leaves from lawns in swaths up to 8 or 10 feet wide.

Utilizing this "two-way action" principle, the Turbo Jet can get leaves out of places inaccessible even to hand raking. Its amazing capacity for work permits one man with a Turbo Jet to do the work of a whole gang of men using rakes and trucks or mulcher-equipped power mowers. And that means MONEY SAVED — in many cases, enough in the first year to pay for the cost of the unit! Write today for folder describing Turbo Jet and its principle of operation.

THE TURBO JET MFG. CO.
22 BOWMAN TERRACE
CINCINNATI 29, OHIO



Open

Baker Builds the Complete Line

For light, average, or heavy-duty snow removal with all sizes, all types of trucks.

Reversible Trip Plows

Models	Size Trucks
358-358A	1½ to 2½ tons
359-359A	2½ to 3 tons
353-353A	Medium
354-354A	Heavy-Duty

One-Way Sectional Trip Plows

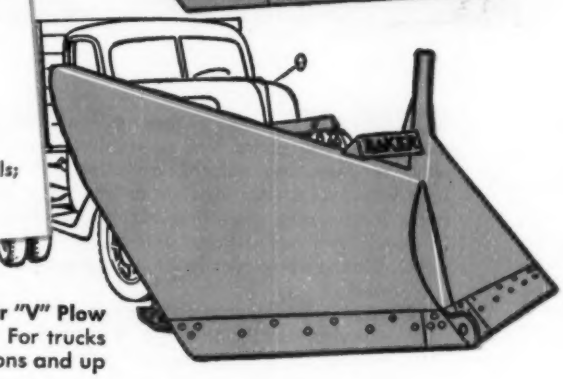
271-271A	1½ to 2½ tons
272-272A	2½ to 3 tons
273-273A	3½ to 5 tons
275-275A	5 tons and up

"V" Plows

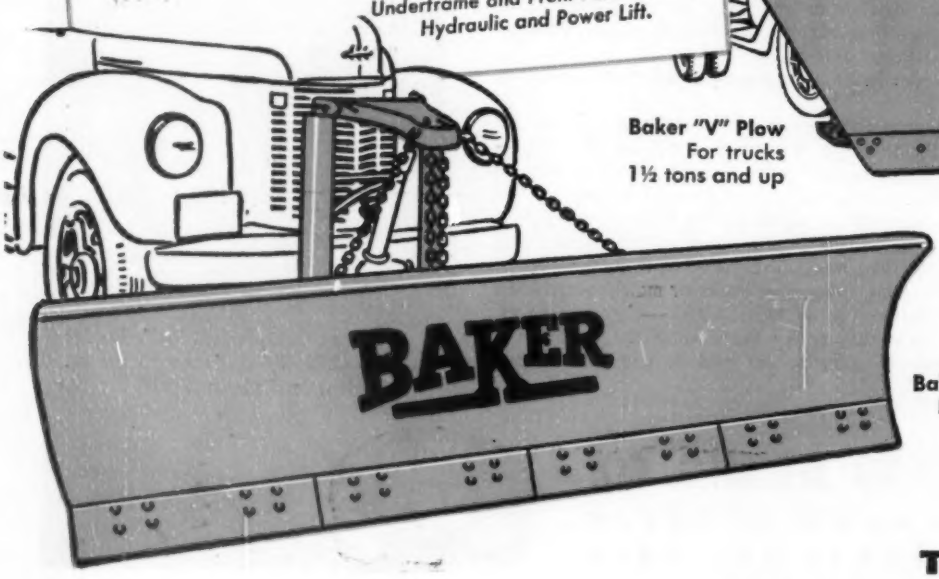
261	1½ to 2½ tons
262	2½ to 3½ tons
263	3½ to 5 tons
265	5 tons and up

Frames provided in both Underframe and Front-Push models; Hydraulic and Power Lift.

Baker One-Way Sectional Trip Plow
For trucks 1½ tons and up



Baker "V" Plow
For trucks 1½ tons and up



Baker Reversible Trip Plow
For trucks 1½ tons and up

THE BAKER

A Baker "V" Plow mounted on truck is shown at left . . . really boiling a load of snow off of a clogged road. Traffic can move soon . . . following the Baker Snow Plow that "opens the road".

Here comes clean roads . . . a Baker Reversible Trip Blade Plow is mounted on the truck. The blade is riding on the road all the time . . . spring-loaded blade rides over obstacle, flips back down on pavement after passing.

roads follow BAKER Snow Plows

Toughest snow-clogged roads are no problem for a Baker

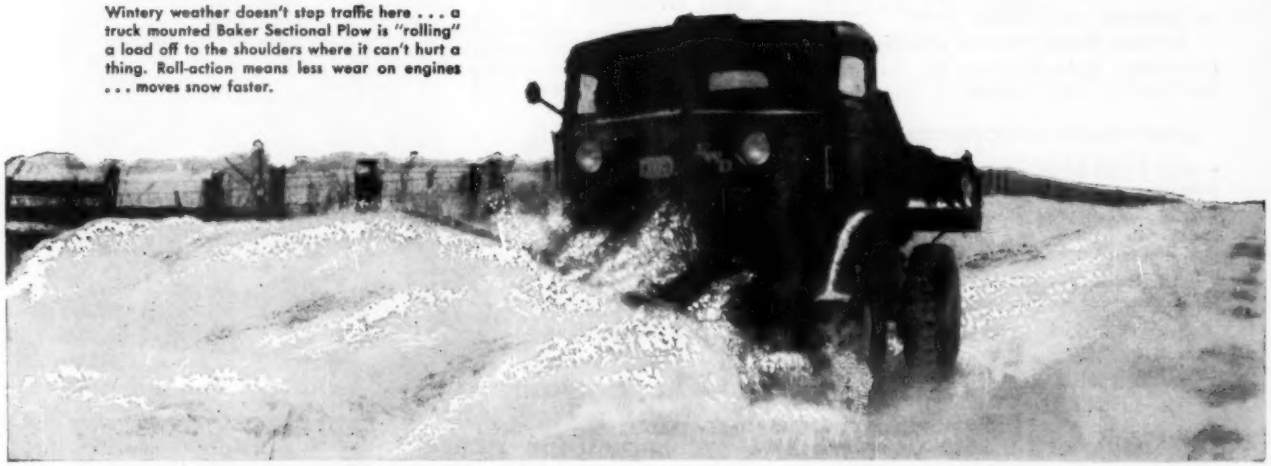
When heavy winter snows hit your area traffic will roll on the "open roads" that follow a Baker Snow Plow . . . and there is a Baker Snow Plow designed for *your truck,* no matter what the *size* or *type.*

Now is not the season for snow, but it is the *time* for you to take *inventory* . . . to see that adequate equipment is *on hand,* for after it snows it is too late to think of the *lack* of snow removal equipment.

Let your Baker Snow Plow Dealer show you the *advanced-design* snow plows for trucks. Snow Plows that will clear roads faster . . . with such outstanding features as "Roll Action" that lifts the snow from the road with less strain on the truck's engine; blades that give cleaner operation right down on the pavement; and that are built *rugged* to really take it under the toughest operating conditions. Don't be caught "short" again this winter. Check the number and size of your trucks . . . then see your Baker Snow Plow Dealer for the *correct* type of blade needed. You can face winter without a worry, knowing your roads will be "open roads" . . . with Baker snow removal equipment on hand.

See your Baker Snow Plow Dealer, ask for Bulletin No. 1003.

Wintery weather doesn't stop traffic here . . . a truck mounted Baker Sectional Plow is "rolling" a load off to the shoulders where it can't hurt a thing. Roll-action means less wear on engines . . . moves snow faster.



MANUFACTURING COMPANY • Springfield, Illinois

"IF YOU COULD DESIGN A NEW REFUSE COLLECTION UNIT, WHAT IMPROVEMENTS WOULD YOU MAKE OVER YOUR PRESENT EQUIPMENT?"

Here's what we asked YOU . . . the municipal operating crews, supervisors, inspectors, private operators . . . the men who know refuse collection best.

THESE ARE YOUR ANSWERS . . . BUILT INTO THE

ALL-NEW HEIL COLECTOMATIC

★ BETTER, FASTER PACKING

A flick of one lever starts the automatic "bulldozer" type packing cycle . . . completed in 23 seconds! Packing plate pushes the load, then imparts a final lifting motion to roll the refuse into the body and assure maximum compaction. No down time for jams! There's no retaining plate to wedge material against packer plate. Simple stoppage control prevents lost time if any material should wedge.

★ GREATER SERVICE ACCESSIBILITY

Simply open the 2-section panels on both sides and the entire working mechanism is within easy reach. The 4-way single-spool valve controlling the packing jacks is mounted on the underbody hoist frame for accessibility.

★ SIMPLER OPERATION WITH LOWER MAINTENANCE COSTS

Only three hydraulic jacks for loading-packing-dumping. Completely automatic operation with one finger-tip control lever. Colectomatic mechanism operates only while loading, eliminating unproductive wear, and resultant maintenance.

★ MORE COMFORTABLE LOADING

Low, wide loading sill reduces worker fatigue and permits two collectors to empty refuse at the same time. The hopper loading sill is the same height as the truck chassis longitudinals.

★ PERSONAL SAFETY

Loading-packing mechanism is completely enclosed. Automatic safety door eliminates possibility of injury to crew or bystanders from flying glass, wood splinters, etc.

★ QUIET OPERATION

There are no clanking chains moving continuously, a feature greatly appreciated in night pick-ups! Only slight engine acceleration is necessary for packing.

MORE COLECTOMATIC FEATURES THAT MAKE YOUR JOB FAST AND EASY

- Short overall length and low height for greater maneuverability
- Clean, odor-free collection . . . sealed body keeps garbage and liquids out of sight and smell
- Balanced weight distribution. More tailgate weight rests on truck longitudinals
- Large utility door on each side of body
- Push buttons at rear to signal driver when pick-up is completed
- Fits standard truck chassis, cab-over-engine or conventional models, 102" CA single axle or 84" CA tandem axle

GB-43

NEW HEIL MOVIE, "Made to Order", describes every new Colectomatic feature in full sound and color. Address requests for free use to The Heil Co., Body and Hoist Division, Milwaukee 1, Wisconsin.

THE HEIL CO.

DEPT. 43104, 3043 W. MONTANA ST., MILWAUKEE 1, WIS.

Factories: Milwaukee, Wis.—Hillside, N. J.

Heil Sales Offices: New York, Union, N. J., Atlanta, Cleveland, Milwaukee, Chicago, Kansas City, Denver, Dallas, Los Angeles, Seattle

In Houston . . .

STEELBINDER Fastens the Signs

A. J. Gerrard & Company, a leader in the steel strapping field, salutes another leader among America's most progressive cities, Houston, Texas. Always watchful for better and more efficient methods, Houston's traffic engineers found Steelbinder the outstanding, safe method of fastening signs. Many other leading cities have reported like findings. We invite you to investigate and compare.

STEELBINDER

- Strapping in stainless or galvanized steel for sign applications. Also aluminum and many other strap types to fill every sign strapping requirement.
- Complete line of sign-attaching accessories—brackets, extension arms, bolts, and seals in stainless and galvanized finishes.
- A Steelbinder service representative will gladly help you solve your sign strapping problem.

TOP PHOTO:
A Houston sign crewman fastens a traffic sign the Steelbinder Way. In the background, Houston's new Coliseum.

BOTTOM PHOTO:
Cooper McEachern, Houston's assistant traffic engineer, inspects newly erected street signs fastened the Steelbinder Way.

WAREHOUSES IN 6 KEY CITIES

BIRMINGHAM	OAKLAND
CLEVELAND	PORTLAND
NEWARK	MELROSE PARK

Sales - Service Offices in 45 Principal Cities

Get all the details now!

A. J. Gerrard & Company

1952 HAWTHORNE DRIVE
MELROSE PARK (CHICAGO SUBURB) ILLINOIS

We would like complete information about the STEELBINDER Method of Sign Fastening.

☐ Please have your local service representative call on us.
☐ Please send us your sign strapping brochures.

NAME ..... TITLE.....

ADDRESS .....

CITY ..... ZONE..... STATE .....

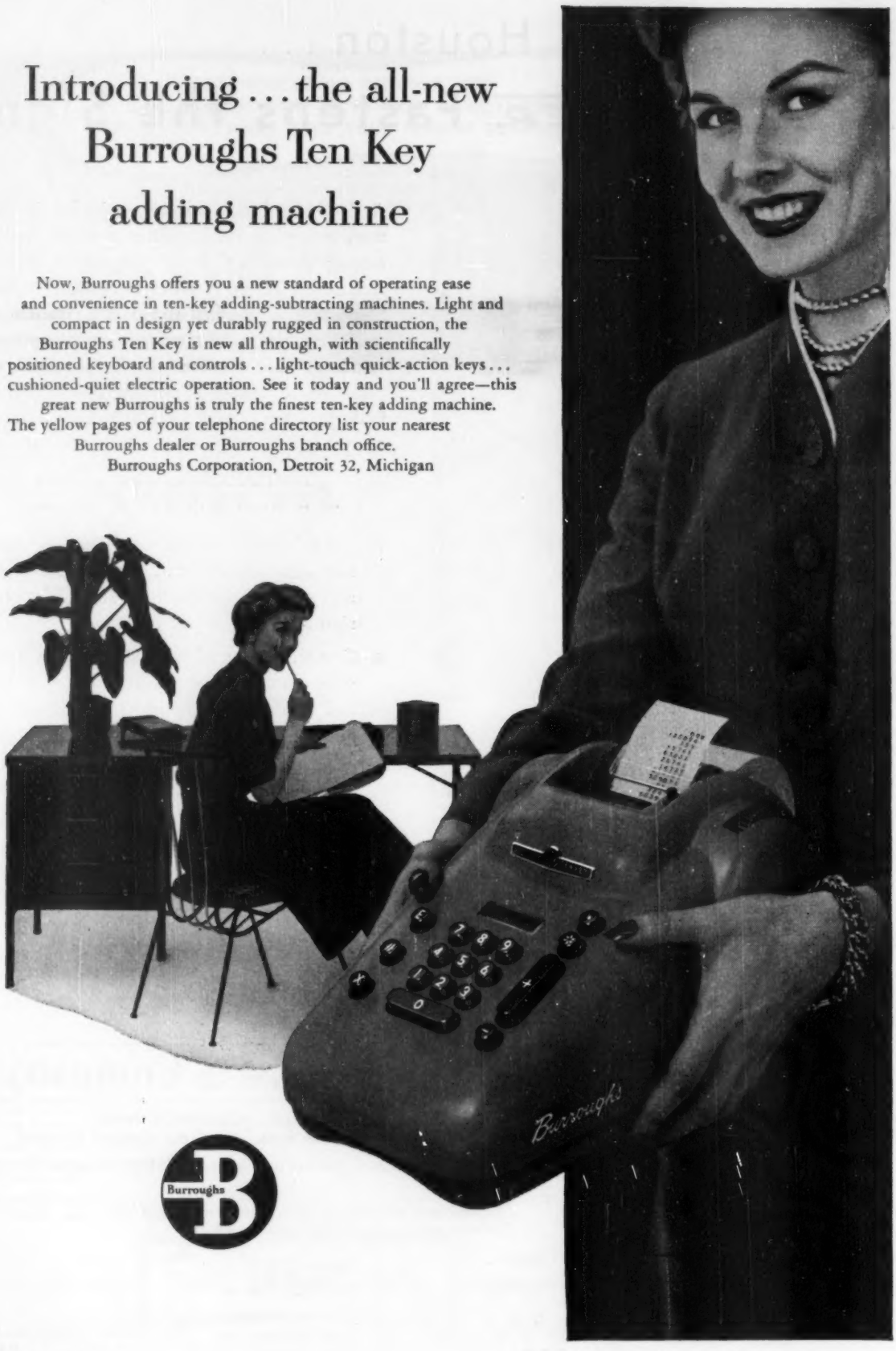
10-54-A

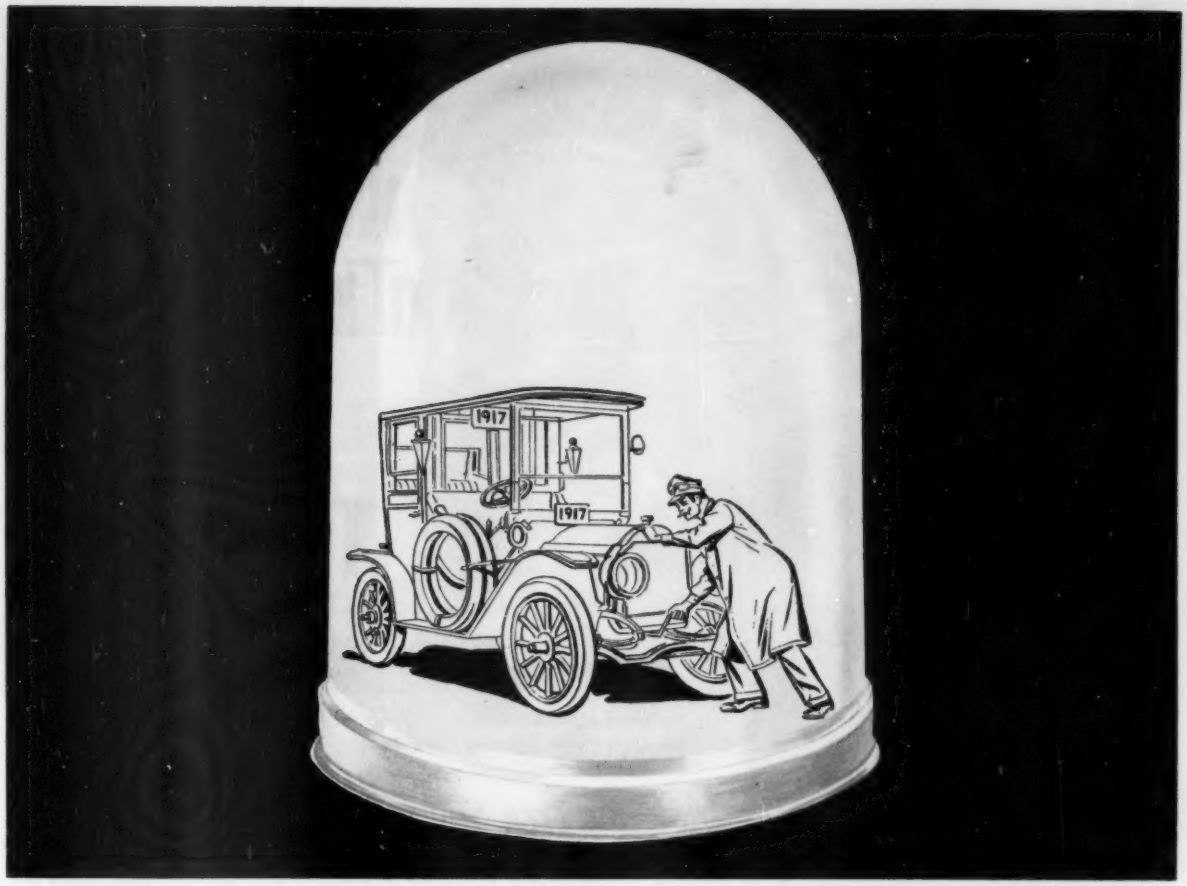
Introducing . . . the all-new Burroughs Ten Key adding machine

Now, Burroughs offers you a new standard of operating ease and convenience in ten-key adding-subtracting machines. Light and compact in design yet durably rugged in construction, the Burroughs Ten Key is new all through, with scientifically positioned keyboard and controls . . . light-touch quick-action keys . . . cushioned-quiet electric operation. See it today and you'll agree—this great new Burroughs is truly the finest ten-key adding machine.

The yellow pages of your telephone directory list your nearest Burroughs dealer or Burroughs branch office.

Burroughs Corporation, Detroit 32, Michigan





how much does it cost... to "crank" an old chlorinator?

The automobile self-type starter isn't news any more—nobody ever cranks a car these days. "Cranking" an old-style chlorinator is equally out-dated.

The F&P mechanical, instrument-type chlorinator is sweeping the country, sales mount month by month. Why? Because municipality after municipality, consulting engineer after consulting engineer, reports the same facts: F&P chlorinators are lower in first cost, are easier to handle, because they are so simple in design, so light in weight, so modern in construction. More important, however, it is always stressed that F&P chlorinators require practically no maintenance, practically no spare parts.

We claim that if you are operating a chlorinator that has a bell jar on it *you need a new chlorinator.* You are "cranking" an old, costly, inefficient chlorinator. Everybody knows that dry chlorine is not corrosive—but that as soon as you put the chlorine in contact with water or water vapor it becomes corrosive. That's what the water tray types of chlorinators do—put dry, non-corrosive chlorine in contact with water and make corrosive vapor out of it. It's not engineering sense and the way to avoid it—and the resulting expensive maintenance—is to get F&P *mechanical, instrument type* chlorinators.

Don't refrain from writing us because you don't need additional chlorinating capacity right now. Moreover—if it is time for a major overhaul or a rebuilding of your bell jar chlorinator, let us quote you for doing this work. We will give you what you may not have gotten previously—a firm price for doing the job before we start on it. The price will be a reasonable one, but we'll also quote you a price for replacing the chlorinator and if you want to spread the cost of the new one by time payments or if you want a lease arrangement, you can have it. Chances are you cannot justify further overhaul or further rebuilding—even at our *fair* price for doing the work.

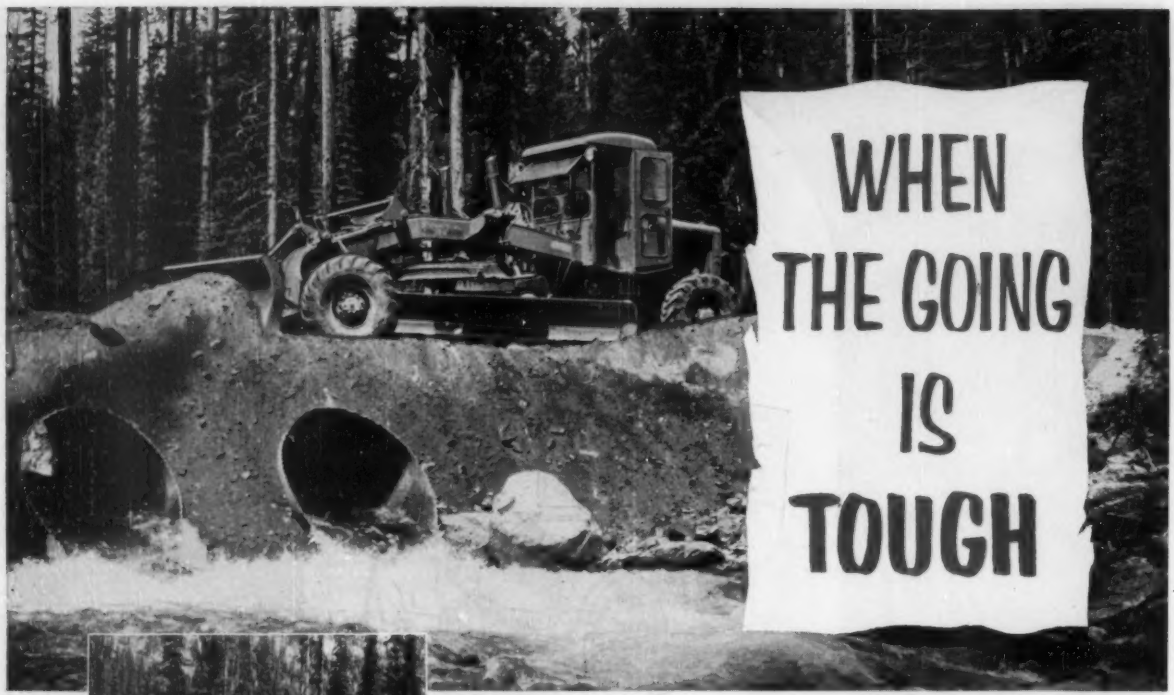
complete process instrumentation

FISCHER & PORTER CO.

804 Fischer Road, Hatboro, Penna.

18 YRS. EXPERIENCE SUCCESSFULLY MANUFACTURING CHLORINE FLOW METERING EQUIPMENT

LA 1010



WHEN THE GOING IS TOUGH

TOUGH! Using Rear Steer to angle the bulldozer blade and spill the material over the side of the fill. Impossible with any other grader-bulldozer.

TOUGHER! Rocks and earth are needed to repair this washout. Traction is ample. Powerful drivers hold front end steady.

TOUGHEST! Clearing boulders from the bed of a rushing mountain stream to open a ford around a bridge.

YOU NEED THE POWER AND TRACTION OF AUSTIN-WESTERN'S ALL-WHEEL DRIVE

Good going or bad . . . earth, stumps or rocks . . . this fast, hydraulically operated bulldozer can do work far beyond the range of such an attachment on an ordinary motor grader, thanks to the extra power of All-Wheel Drive and super-maneuverability of exclusive All-Wheel Steer. By swinging the rear end of the grader to right or left, the machine can be used as an angledozer.

The bulldozer blade is of welded steel construction, heavily built and reinforced to handle successfully work of the rough-and-tumble variety pictured on this page, and move maximum amounts of material when the going is easier.

There is constant or intermittent need for a bulldozer on many road construction and heavy maintenance operations. On rugged Austin-Western Power Graders, this attachment eliminates the necessity of tying up extra equipment for the occasional job; is an essential on many jobs and a time and money saver on dozens of others.

Austin-Western
Power Graders · Motor Sweepers
Road Rollers · Hydraulic Cranes

BALDWIN BLH LIMA-HAMILTON
Construction Equipment Division

Manufactured by
AUSTIN-WESTERN COMPANY
Subsidiary of Baldwin-Lima-Hamilton Corporation
AURORA, ILLINOIS, U.S.A.

Here's proof...

G-E 2-WAY WILL PERFORM IN ANY CIVIL DISASTER!

● Civil defense authorities throughout the nation agree that successful programs must include dependable radio communication. The system has to function before, during and after an emergency. Well, G-E Mobile Radio does exactly that... and it can be proved!

Note the experience encountered by Tennessee's State Highway Patrol. The car pictured above was caught in a cyclone near Dyersburg . . . turned up on end . . . spun around several times . . . then hurled 1200 feet. An examination of its General Electric mobile transmitter after the disaster showed *just one tube broken and still capable of operation.*

Make this superior communications equipment *your* first line of defense. Buy only General Electric!

2-WAY MOBILE RADIO

General Electric Company, Section X10104
Electronics Park, Syracuse, New York

Please have a Communications Counselor call at my office.

NAME.....

ADDRESS.....

CITY.....STATE.....

GENERAL ELECTRIC

The test of a century

F.P.G.

This is Lancaster, Pa., County seat in one of the most highly cultivated farming districts in America.

Bettmann Archive

Old print showing southwest view of Lancaster about 100 years ago.

MODERNIZED cast iron

is the test that tells!

LANCASTER installed cast iron water mains 100 years ago . . . and installs them today.

Lancaster, Pa., has grown in 100 years from about 12,000 population to nearly 65,000 — but it has not outgrown the habit of buying cast iron pipe. From four miles of water mains a century ago, the present distribution system has increased to 105 miles of pipe—all of it cast iron pipe. Services have grown from 2,000 to nearly 20,000.

The word "test" means—"*put to the proof*"—according to the dictionary. Well, 60 utilities have put cast iron pipe to the *proof* for a century—a test to end all tests. They installed cast iron water or gas mains 100 years, or more, ago that are still in service. Yes, the test of a century has *proved* beyond question the long life and low cost per service year of cast iron pipe.

Cast iron pipe has been a rugged, long-lived product from the earliest days. Today's *modernized* cast iron pipe, centrifugally cast, is even stronger, tougher, and more uniform in quality. And, where needed and specified, it is centrifugally lined with cement mortar to assure sustained carrying capacity throughout the long life of the pipe.

Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 122 So. Michigan Ave., Chicago 3.

This cast iron water main laid in 1835 by the Bureau of Water of Lancaster is still functioning after 119 years of service.

CAST Q IRON

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

pipe FOR MODERN WATER WORKS OPERATION

TENNESSEE CORPORATION

Ferri-Floc

TC

FERRIC SULPHATE

It's Ferri-Floc *...a Versatile* COAGULANT!

No matter what the season, whether Spring flood or Summer drought, there is always a turbidity problem to some degree. And an effective coagulant for any water treatment problem is TC FERRI-FLOC, a partially hydrated ferric sulphate. A stable, free flowing granular salt, FERRI-FLOC may be fed with few modifications through any standard dry feed equipment. Only mildly hygroscopic, it permits ease of handling and closed hopper storage over long periods of time.

Water Treatment
Ferri-Floc coagulates surface or well waters, and it aids taste and odor control. It is effective in lime soda-ash softening, and is adaptable to treatment of practically all industrial water or wastes.

Sewage Treatment
Ferri-Floc coagulates waters and wastes over wide pH ranges. It provides efficient operation regardless of rapid variations of raw sewage, and is effective for conditioning sludge prior to vacuum filtration or drying on sand beds.

Samples, Specifications and tailed Information Available upon Request.

TENNESSEE TC CORPORATION

617-629 Grant Building, Atlanta, Ga.

Ferri-Floc **HAS THESE SUPERIOR ADVANTAGES!**

1 Rapid Floc Formation 2 PH correction 3 Taste and odor control 4 Color removal 5 Softening 6 Ease of operation 7 Bacterial removal 8 Manganese and Silical removal 9 Turbidity removal 10 Economy

SULPHUR-DIOXIDE HIGHEST QUALITY SO_2

SULPHUR-DIOXIDE is effectively used for dechlorination in water treatment and to remove objectionable odors remaining after purification.

COPPER TC SULPHATE

COPPER SULPHATE will control about 90% of the microorganisms normally encountered in water treatment plants more economically than any other chemical.

Solve these Winter Maintenance Problems with SOLVAY Calcium Chloride

For Cold Weather Concrete Paving and Repairs

Get high early strength concrete with standard cement plus Solvay Calcium Chloride

- Lower your costs
- Permits positive control at all temperatures
- Avoids the stocking of special cement
- Assures high ultimate strength
- Provides additional cold weather protection
- Includes "Built-in" curing

For Positive, Fast-Acting, Low-Temperature Ice Control

- For treating abrasives
- For quick, easy ice removal
- For thawing drainage basins and manhole covers

For General Winter Maintenance

- For thawing frozen ground for emergency repairs
- For the freezeproofing of backfill
- For liquid weighing of pneumatic equipment tires
- As an antifreeze solution for emergency fire fighting equipment

SOLVAY

Calcium Chloride

MAIL COUPON FOR LITERATURE

SOLVAY PROCESS DIVISION, Allied Chemical & Dye Corporation
61 Broadway, New York 6, N. Y.

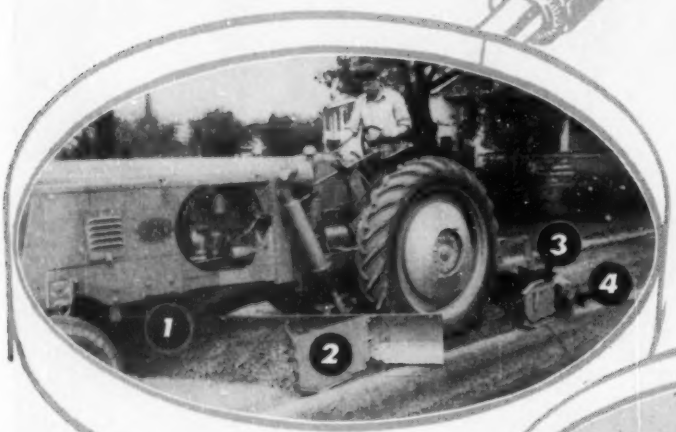
Please send me, without cost or obligation, information on the use of Solvay Calcium Chloride for _____

Associated with _____

Address _____ 61-10

HOW HUBER SOLVES

Two Special Problems



SMOOTH BERMS IN ONE PASS

Hydraulically controlled blade (1) pulls in berm material to edge of pavement where gathering blade (2) carries it until needed to fill low spots. Rear wheel compresses fill material. Hydraulically controlled berm leveler (3) removes and feathers-out excess material. Cleaner blade (4) sweeps pavement clean.

CLEANING UNDER GUARD RAILS

Huber Side Dozer attachment enables Maintainer to scalp berms and shoulders under any guard rail 6″ or more off ground. Hydraulic action pushes 48″x6″ blade to remove sod and gravel, formerly a laborious hand operation. Side dozer has 72″ reach.

THESE ARE ONLY TWO OF THE JOBS

a versatile Huber Maintainer can do. Other attachments convert it to a bulldozer, lift loader, highway mower, snow plow, broom, road planer or patch roller. Its 42½ horsepower puts a heavy push behind its 9-foot moldboard, and its 6,000-pound weight, ability to travel at pick-up truck speeds and to turn and work in close quarters make it a favorite tool for many classes of work.

NOTE TO CONTRACTORS

Talk with the political subdivisions in your area about handling their berm leveling and guard rail cleaning problems on a contract basis.

HUBER MANUFACTURING CO. • Marion, Ohio, U. S. A.
Manufacturers of Huber Maintainers, Graders and Complete Line of Rollers

HUBER

THIS IS NO "BULL!"

"Flexibles" really solve sewer-cleaning problems!

Mexico City has a unique and serious sewer problem. Due to the settling of a large portion of the city, it is now approximately 20 feet lower than its sewer outlet, the Grand Canal. Until the condition is corrected and normal flow restored, there is a continuing problem of removing solids from the sewers, some of which are more than 300 years old. As a solution, the city has purchased over 200 "Flexible" Bucket Machines—one of which is pictured. Mexico City endorses "Flexibles" for their efficient performance and ease of operation and maintenance. We invite the opportunity to give your city an "on the job demonstration."

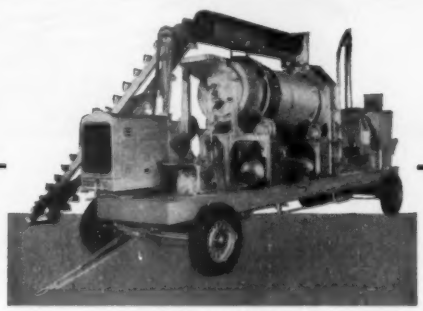
Write for our **FREE** *Catalog*

Flexible SALES CORPORATION

3786 Durango Ave., Los Angeles 34,

(DISTRIBUTORS IN PRINCIPAL CITIES)

AMERICA'S LARGEST LINE OF PIPE CLEANING TOOLS AND EQUIPMENT



Cities Can Save On Street Repairs With White Portable Plants

These 8-10 tons per hour Asphalt Plants economically repair almost any pavement. Asphalt, brick, concrete, macadam, can be resurfaced or patched. Alleys, sidewalks, driveways can be paved.

Produce for immediate hot laying, or for deferred cold patches. Match any bituminous surface.

Mixes at plant, including labor, fuel, and overhead cost about $4 per ton, with $2 aggregate. Average 160 to 200 sq. yds., 1" thick per hour. Compare this with your present costs!

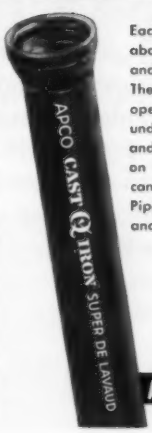
Also larger plants, 15 and 30 tons per hour.

Write for catalog and name of nearest dealer.

White Mfg. Co.

ELKHART 1 **INDIANA**

TESTED AND RECORDED



Each length of pipe we manufacture passes through the above hydrostatic test press where it is filled with water and the pressure raised to 500 pounds per square inch. The most common water works pipe is designed for an operating pressure of 150 pounds per square inch. This undergoes the 500 pounds per square inch hydrostatic test and permanent records for each piece of pipe are kept on file for inspection by our customers at all times. You can be assured with Alabama's Super De Lavaud Cast Iron Pipe. In sizes of 3" to 24" in modern long lengths. Bell and Spigot, Mechanical Joint and Flanged Pipe.

General Sales Offices

ANNISTON, ALABAMA

We Invite Inquiries to Our Nearest Sales Office

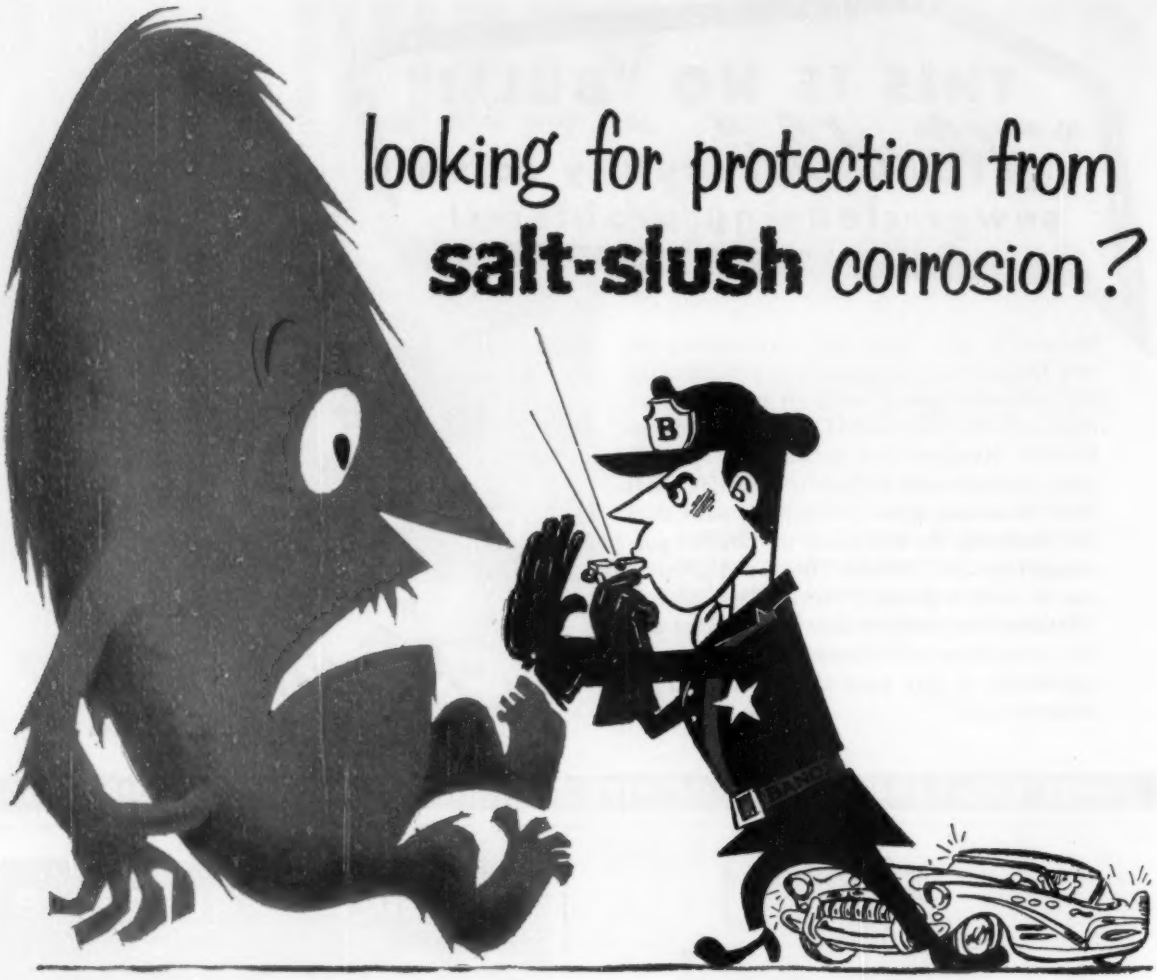
120 S. Michigan Ave. Chicago, Illinois

350 Fifth Avenue New York 1, New York

ALABAMA PIPE COMPANY

ANNISTON **ALABAMA**

looking for protection from **salt-slush** corrosion?



use BANOX®

Everyone knows that salt is better and thriftier* than abrasives for keeping streets and highways clean and safe for winter driving. But salt does have one important drawback: Salt-Slush Corrosion. Here's where Banox can help.

Banox will give you the clean-street benefits of salt without the penalty of salt-slush corrosion and Banox does it for very little additional cost. As little as 1% of Banox, easily added to salt, will stop salt-slush corrosion on automobiles, municipal equipment, bridges and other metal surfaces. Furthermore, a salt-Banox mixture does not clog gutters, catch basins or sewers, thereby eliminating costly clean up in the spring.

Remember, if you want the best, and lowest cost snow and ice control, just use one pound of Banox for every hundred pounds of salt. Investigate the benefits of the Banox-salt team. Write for your free booklet: "*Stop, Look and Save with Banox.*"

*Comparative cost figures for both city streets and highways indicate that you save as much as $4.27 per mile by using rock salt instead of abrasives.

BANOX

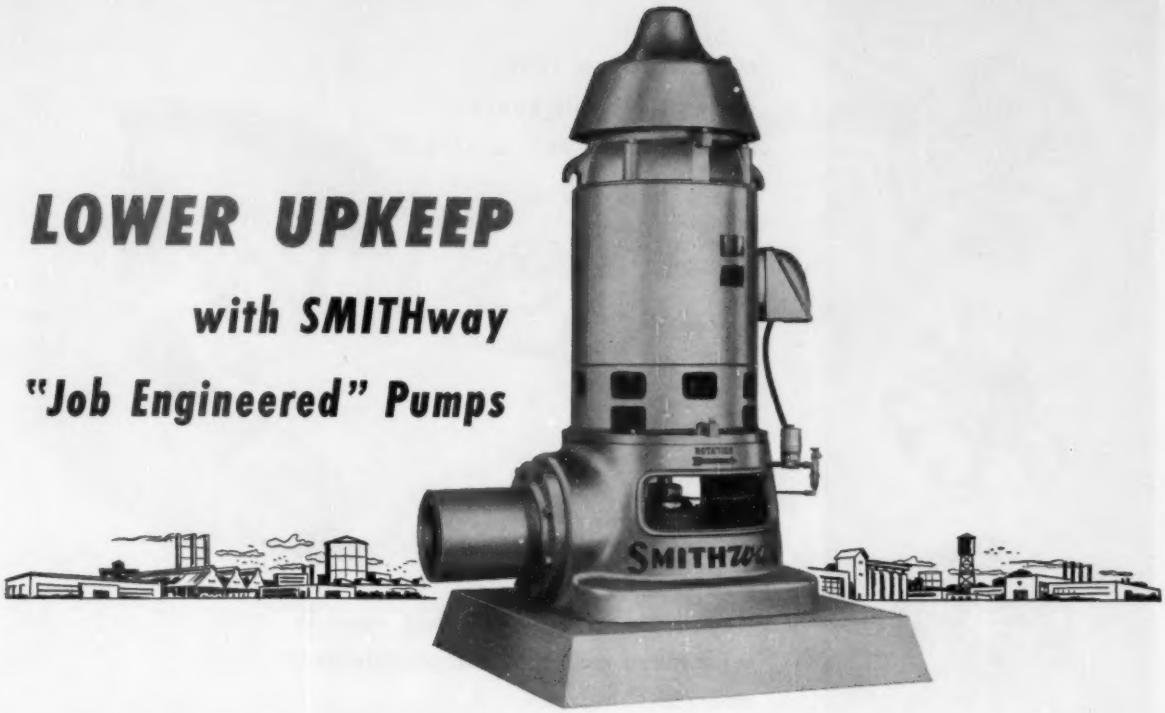
calgon inc.

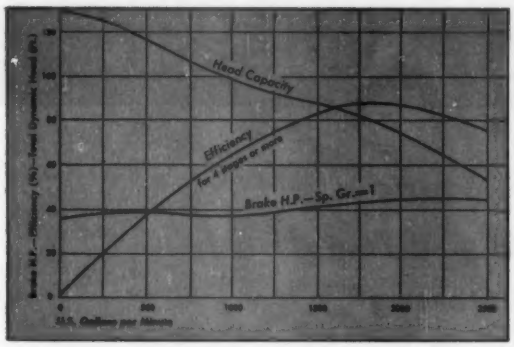
HAGAN BUILDING, PITTSBURGH 30, PENNA.

LOWER UPKEEP

with SMITHway

"Job Engineered" Pumps





CHARACTERISTIC CURVES

These curves show just how successfully SMITHway "Job Engineered" Pumps meet your needs. Graph was obtained from an actual test on a 14" SMITHway DKH Pump, 1760 rpm., with glass-lined bowls and bronze impellers; capacity: 1875 gpm.; head per stage: 79 feet; efficiency: (four stages) 87%.

LOWER operating and maintenance costs are being recorded by the new SMITHway Pumps because of their *higher efficiency*. This higher efficiency is attained through design improvements which are ahead of the industry *plus* the fact that each installation is "Job Engineered" to suit your specific requirements of capacity, depth, water source, power supply and other factors. Let the nearest A. O. Smith representative recommend the right pumps to give you better performance and lower operating costs.

Through research ... *a better way*

A.O.Smith

CORPORATION

HYDRAULIC DIVISION

5715 Smithway St., Los Angeles 22, California
Offices in principal cities
International Division, Milwaukee 1

I am interested in the new

8-page bulletin, No. 735-1

Send to:

Name_____ Title_____

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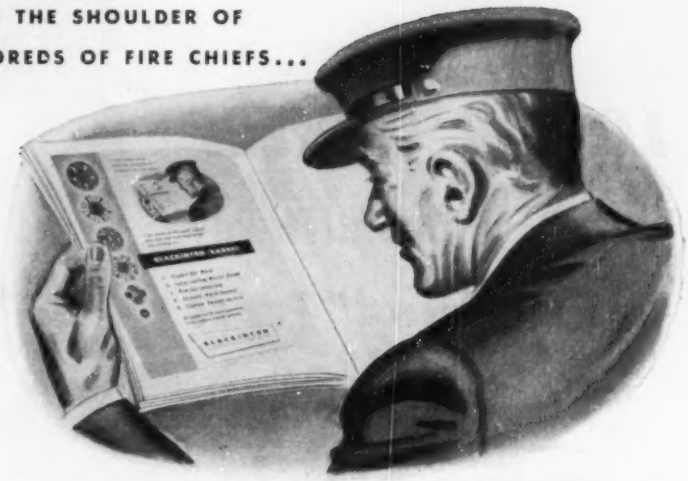
ILLUSTRATIONS SHOWN ¾ ACTUAL SIZE

Blackinton's popular Cap, Collar, and Lapel Insignia available in several finishes—all with colorful hard enamel centers. Ask your supplier to show you the complete line of BLACKINTON BADGES the next time he calls. Be sure to specify BLACKINTON BADGES.

IF YOU COULD LOOK
OVER THE SHOULDER OF
HUNDREDS OF FIRE CHIEFS...



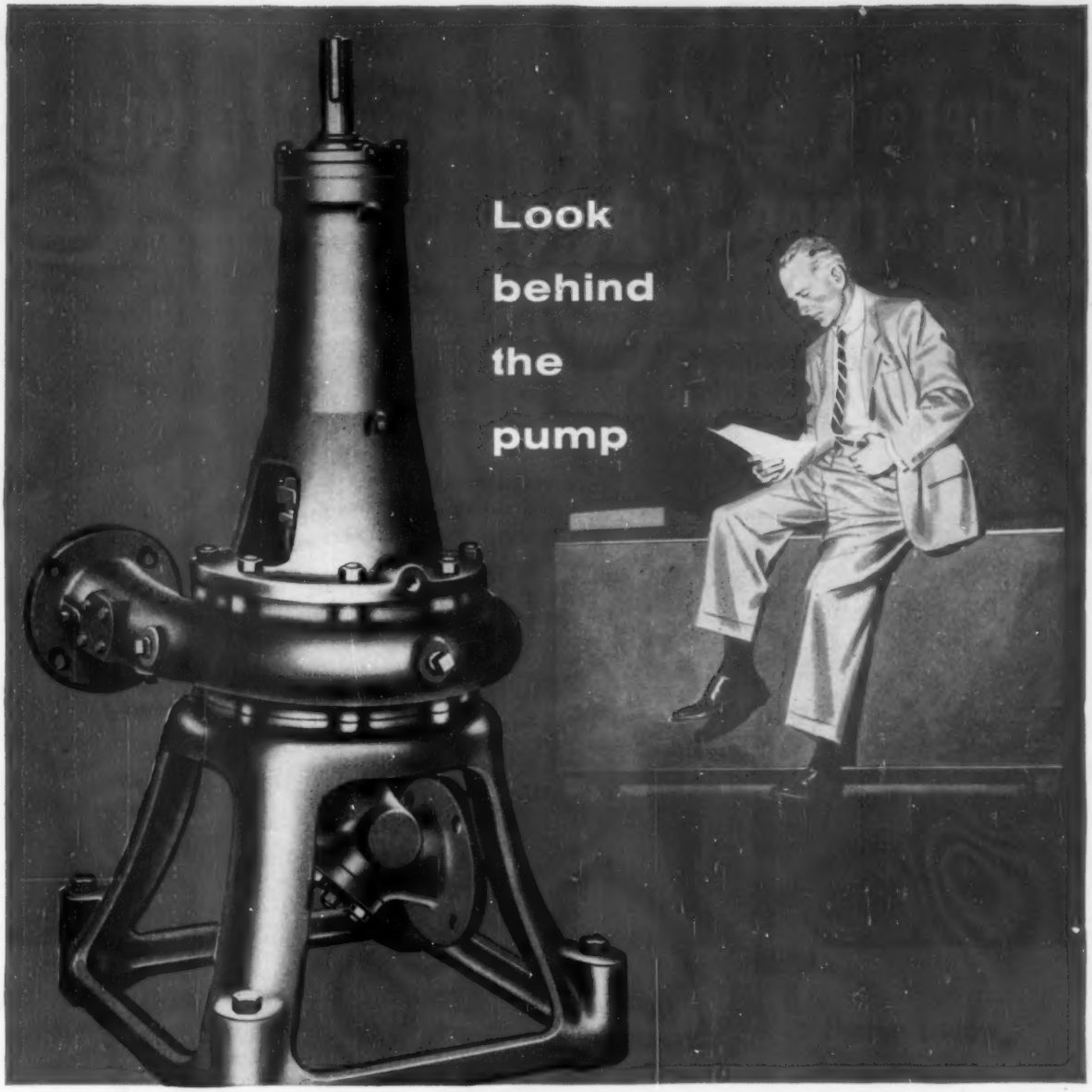
—you would see five good reasons why more and more departments are switching to—

BLACKINTON BADGES

1. *Expert Die Work*
2. *Long Lasting Mirror Finish*
3. *Precise Lettering*
4. *Smooth, Hard Enamel*
5. *Custom Design Service*

All backed by 102 years experience in the uniform insignia business.

BLACKINTON
V. H. BLACKINTON & CO., INC., ATTLEBORO FALLS, MASS.



How much for maintenance?

In figuring the cost of a trash pump, what do you allow for maintenance . . . how much to clear out the trash that clogs the impeller? Will it be daily? Every other day? Weekly?

Or figure it this way. What price a pump that won't clog . . . that will virtually eliminate maintenance? That's why you should figure the Fairbanks-Morse Bladeless Impeller Pump! Its unique whirling tube won't clog . . . there are no blades or projections to catch and hold trash.

This is just one more example of the quality that is Fairbanks-Morse . . . in design, materials, workmanship, a standard of quality that gives you more for your pump dollar. For pump performance you can depend on, rely on the world's largest manufacturer of a complete pump line. See your Fairbanks-Morse Branch or write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

FAIRBANKS-MORSE

a name worth remembering when you want the best

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • RAIL CARS • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS

There's a Whale of a Difference in Parking Meters

. . . and before you buy, be sure to get all the facts on the meters you are considering.

Check carefully reports on . . . .

EARNINGS . . . not for a year or two, but for five to ten years and more

MAINTENANCE EXPENSE . . . how much will it cost to keep them operating

POTENTIAL PRODUCTIVE LIFE . . . based on many installations

ENGINEERING . . . how well is it designed and built

QUICK SERVICING FEATURES . . . to minimize down time

REPUTATION . . . in cities where installed

DEPENDABILITY . . . will they keep operating under adverse weather conditions

RELIABILITY AND EXPERIENCE OF MANUFACTURER

MICHAELS PRODUCTS:

Store Fronts
Lettering
Check Desks
Lamp Standards
Marquees
Tablets and Signs
Name Plates
Astragals
Railings
Grilles and Wickets
Kick and Push Plates
Push Bars
Thresholds
MI-CO Parking Meters
Museum Trophy Cases
Bronze and Aluminum Doors
Bank Screens and Partitions

Bronze and Aluminum Plaques

MI-CO will be glad to supply complete reports and submit engineering and construction data on both the MI-CO Manual and the MI-CO Twin Automatic. Both meters are highly regarded wherever installed; both have enviable earnings, maintenance and performance records.

If you plan to install your first meters, replace less dependable meters, expand metered parking to additional areas, develop off-the-street parking lots or ramps, be sure to learn how much more MI-CO has to offer for your parking meter dollars.

MI-CO METERS, 231 Court St., Covington, Kentucky

Division of The Michaels Art Bronze Co., Inc.

NOW-positive cleanliness in duplicating-it's

AZOGRAPH

Here is a completely new, patented, low-cost way to duplicate copies. It is fast. It is simple. And—for the first time—here is a process that is completely clean from start to finish.

There is an electric AZOGRAPH duplicator for offices where there is frequent or continuous need for copies—a hand operated model designed for even the smallest office or department.

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THE FIRST NAME IN DUPLICATING

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Without obligation please ( ) send full information about ( ) arrange for demonstration of AZOGRAPH—the new development in MODERN duplicating.

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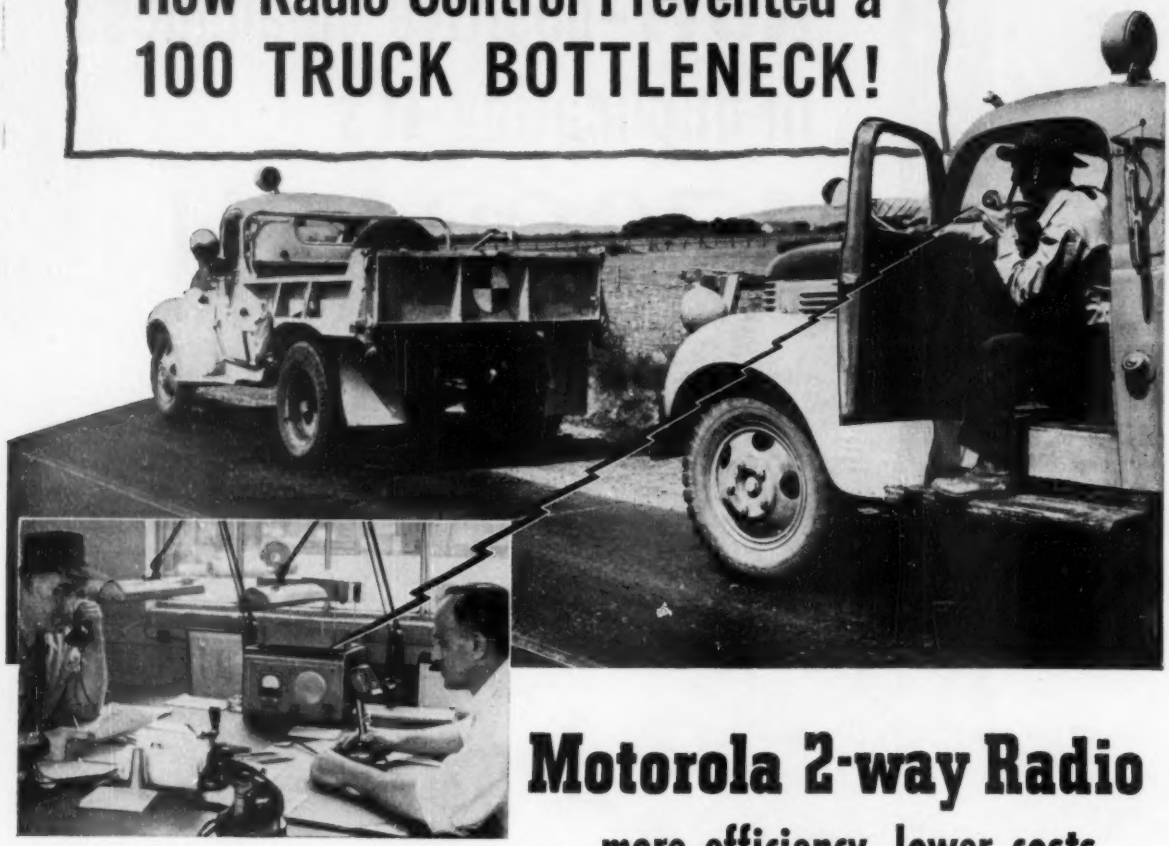
2-WAY RADIO IN ACTION—NO. 4

How Radio Control Prevented a 100 TRUCK BOTTLENECK!



Dispatcher at headquarters receives report of road-block along planned route . . . flashes word to trucks enroute.

Motorola 2-way Radio

. . . more efficiency, lower costs through radio communication

A close call with not a moment to lose!

Only Motorola 2-way radio on the alert supervisor's truck prevented a $1200 loss on the job.

As it turned out, the trucks were quickly rerouted—saving approximately 150 truck-hours (at $8.00 per unit per hour.)

That's only one instance. Here are other ways Motorola saves and pays: (1) Provides instant, pinpoint command of all operations, even in remote locations; (2) Permits quick solutions to emergencies of all kinds; (3) Facilitates materials handling and materials delivery; (4) Allows maximum, split-second flexibility; (5) Increases coordination and efficiency and decreases "lost time"; (6) Helps to do the job *better* and *faster . . . at lower cost!*

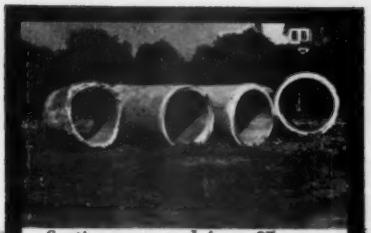
For the finest of equipment — backed by more than 25 years experience in mobile radio —plus the finest and strongest national service organization in the field, insist on Motorola 2-Way Radio!

national Motorola® RADIO COMMUNICATIONS service

Motorola Communications & Electronics, Inc.

A SUBSIDIARY OF MOTOROLA, INC

4501 W. Augusta, Chicago 51, Ill. • Rogers Majestic Electronics Ltd., Toronto, Canada



Sections removed from 27 year old Riverside pipeline to accommodate new pumping system.

A PIPELINE–27 YEARS OLD AND BETTER THAN EVER!

Unretouched photo of pipe section after 27 years in the ground. Note smooth interior wall.

Surge tanks at booster station. Automatic controls actuate pump according to water level at intake reservoir weir 7 miles away.

Increased efficiency of American Reinforced Concrete Pressure Pipe is saving $$$ for Riverside

Riverside, California water works engineers devised a method for meeting rising peak water demands by increasing the capacity of a 27-year old reinforced concrete pipe line. The 7-mile 42″ gravity line was, and is, a main unit of the city's water supply system. Several sections of pipe were removed to make room for an ingenious vacuum booster system devised by the Riverside men. The centrifugally spun pipe sections, manufactured by American in 1927 and installed with collared joints, were found to be in excellent condition. The steel reinforcement was bright and untarnished, the rugged concrete had improved with age. The interior walls were extremely smooth.

Flow tests conducted earlier had revealed an *increase* in hydraulic efficiency (C=140; Hazen-Williams Formula) since the line was installed. Here again is the proof that you can design for a high sustained hydraulic capacity and thereby gain years of extra protection against foreseen and unforeseen increases in demands for water.

The excellent condition of this pipe enabled the Riverside engineers to install their vacuum system and eliminate the need for a parallel line. This resulted in an estimated saving of $650,000.00 to the taxpayers and for many years to come they can enjoy the benefits of a water supply line with costs long since amortized.

The use of American Reinforced Concrete Pressure Pipe in municipal water systems is insurance against large future outlays for repairs, maintenance and high pumping costs. Help on *your* project from our sales engineers and bulletins on American's pressure and non-pressure pipe products are yours for the asking. Write or phone for complete information.

American PIPE AND CONSTRUCTION CO.

Main Offices and Plant: 4635 Firestone Blvd., South Gate, California
District Sales Offices and Plants: Hayward • San Diego • Portland, Ore.
Concrete pipe for main water supply lines, storm and sanitary sewers, subaqueous pipe lines

NEW IDEA IN TRAFFIC STOPPERS . . . at NEW LOW PRICES!

They slip over your present signs restoring their "newness," hence your present signs are never out of service. Now in Red . . . the new idea in Stop signs and reflectorized, of course . . . for effective night and day service, (also in standard traffic yellow). Attach in less than 5 minutes . . . and the cost? . . . less than half that of ordinary traffic signs!

GRACE "EZ-ON"® FACES

. . . are the 'hottest' item in the sign industry today. In wide use by several Highway Departments for over 3 years.

STANDARD COPY OR YOUR OWN

They're made of 30 ga. steel and are furnished in two shapes . . . octagon and diamond . . . and in 2 sizes . . . 24 in. and 30 in. May be applied in less than 5 minutes, and without taking present sign out of service. Any copy you may desire . . . standard and regulatory, or your own special copy if you prefer. Now in wide use in New York, Nevada, Texas, Minnesota, Kentucky, Ohio, Missouri, Iowa and other states and cities. INVESTIGATE . . and save. Their cost is HALF that of ordinary signs!

"EZ-ON"® FACES

being applied at 6th and Washington in Paducah, Ky.

1. You slip 'EZ-ON' Faces over old sign. Note Wide Flanges.
2. Then bend flange backward holding 'EZ-ON' Face in place.
3. Use special Crimping Tool to clamp flange and secure sign.

AGENTS WANTED — WRITE FOR FULL INFORMATION

THEY'RE REFLECTORIZED

GRACE SIGN & MFG. CO.
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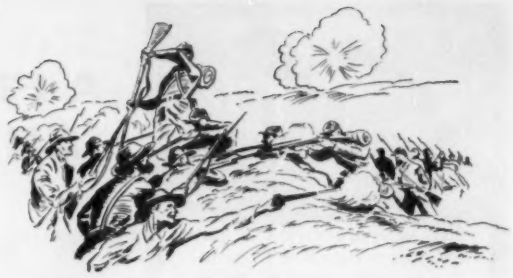


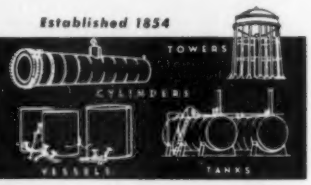
TEN YEARS
before the Battle of Atlanta

In 1854, ten years before the Battle of Atlanta, we started out as a small ironworks. Many communities and many mills secured their first elevated tanks for water supply from us. For the privilege of celebrating our Centennial, we express our appreciation for the friendship of four generations of customers, and the loyalty of four generations of workers.

1854 R.D. COLE *Centennial* 1954

R.D. COLE MANUFACTURING CO.
NEWNAN, GA.

Established 1854



A Practical Sewage Plant for the Small Community -The SPIRAGESTER

The Spiragester is the kind of little city sewage treatment plant that practical men appreciate.

. . . **It combines** primary settling with the digester in a simple, compact structure (see drawing below).

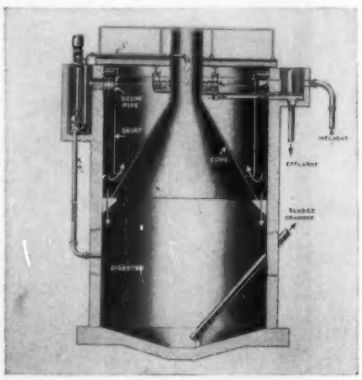
. . . **It is simple** to build, flexible to operate, and an efficient performer.

. . . **It represents** "blue chip" long-term investment. You don't outgrow a Spiragester. You simply turn it into a digester and install separately one of our fast-acting Spira-flo Clarifiers and your problems of increased flows are solved.

The Spiragester writes a record that speaks for itself. Let us show it to you.

If you have a larger plant troubled with overload problems, write us abou, them also. We have the men and equipment to give you the answer.

WRITE TODAY FOR BULLETIN 124



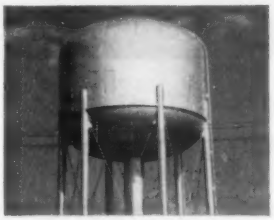
LAKESIDE ENGINEERING CORPORATION
222 W. Adams St. Chicago 6, Ill.

Beautify as you protect city equipment, water and sewage works, fences, stop signs, fire hydrants, street lights, tanks, trucks, etc.!

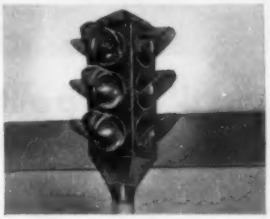
RUST-OLEUM saves time, money, and metal!—and beautifies as it protects! Brush RUST-OLEUM 769 Damp-Proof Red Primer right over the remaining rust after scraping and wirebrushing to remove rust scale and loose rust! Easy as that to save even badly rusted metal! For colorful beauty, use any of RUST-OLEUM's distinctive finish coatings in ALUMINUM, RED, WHITE, GREEN, GRAY, BLUE, ORANGE, BLACK, and many others. RUST-OLEUM resists rain, snow, sun, fumes, heat, salt water, salt air, weathering, etc. to give you colorful, lasting protection. See your local classified telephone directory under Rust Preventives or Paints for nearest source of supply, or mail coupon today.

STOP RUST! with RUST-OLEUM®

Available in Aluminum, Black, White, Red, Green, Gray, Blue, Orange and many others.



Water tanks, fuel tanks—all need RUST-OLEUM decorative beauty and lasting protection.



Stop lights, stop signs, and fire hydrants are another way to utilize RUST-OLEUM protection.

RUST-OLEUM matches such original manufacturer's colors as Harvester, Caterpillar, and many others for your tractors, trucks, etc.

Use bright RUST-OLEUM colors on your tanks, pumps, pipes, and machinery indoors and out.

Street lights need RUST-OLEUM's year 'round resistance to salt water, salt air, rain, snow, sun, fumes, heat and weathering.

You'll find RUST-OLEUM at work in water and sewage plants all over the country—giving decorative beauty and lasting protection.

ATTACH TO YOUR LETTERHEAD AND MAIL TO:

RUST-OLEUM CORPORATION, 2513 Oakton Street, Evanston, Illinois

- ☐ Please Send Me A FREE TEST SAMPLE To Apply Directly Over Sound Rusted Surfaces.
- ☐ Complete Literature With Color Charts.
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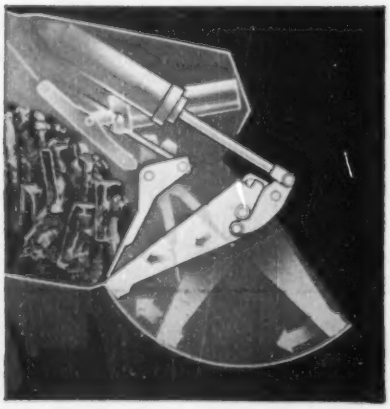
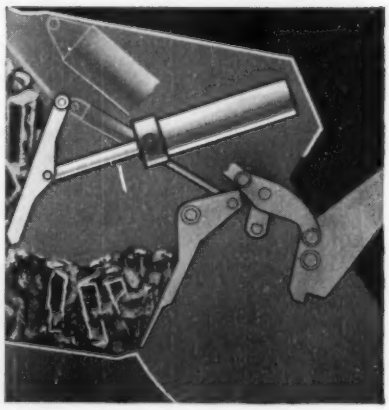
NOW still bigger with still

EXCLUSIVE "Dual Thrust" compaction... with the new Jam-Packing Panel



1ST THRUST — In the big new Load-Packers, the hopper load is hydraulically pushed into the body under 70,000 lbs. pressure. At end of compression stroke, ram-door swings back and opens automatically ready for reloading . . . retaining panel automatically locks to keep compression within body.

2ND THRUST — After the first thrust is completed, the Jam-Packing Panel pushes already-compacted material forward into the body, adds further compaction with another 35,000 lbs. pressure. This provides far greater compaction than possible on any other unit. Cycle is completely automatic, trouble-free.



LOAD-PACKERS*

greater compaction

Three new Load-Packers* enable you to cut refuse collection costs up to one-third!

Now, in response to the requests of city after city, 3 "bigger brothers" have been added to the famous Gar Wood Load-Packer line. There's a new 20-yard size with standard compaction . . . plus a 20-yarder and a 24-yarder with new fully-automatic "Dual Thrust" compaction, which insures bigger refuse loads than ever before possible.

These giant new Load-Packers can mean a great deal to your community. *Two 24-yarders, for example, can do the work of three 16-yarders.* With two 24-yard Load-Packers, you make only 4 trips to the dump for every 6 you used to make. You save gas, oil, and tire wear. You save on manpower because two drivers do the work of three. You save service and maintenance because you have two units in place of three. You even *save up to $2,000 in original investment,* since you have to buy one less body and one less chassis. And, because of the new "Dual Thrust" compaction, you carry even more per load than you'd expect from any other 20 or 24-yard unit.

You are already well acquainted with the 10, 13, and 16-yard GarWood Load-Packers because more of these units have been sold in the past 16 years than all other makes of compaction-type refuse collectors combined.

Now let us show you exactly how these new *bigger capacity savings* can make your service budgets go still further. Ask your local GarWood distributor to help you analyze costs. He'll be glad to show you a Load-Packer in action, too, so you can judge its advantages for yourself. Call him today to arrange the details.

plus all the famous Load-Packer features

- **Loads everything** — Load-Packers take and compact everything . . . garbage, trash, wooden crates, broken furniture . . . even rugs, tires, cement blocks.
- **Low-level loading** — Big wide hopper provides room for entire crew to load at once. Low height, wide hopper eliminates spillage, keeps streets free of broken glass.
- **Greater maneuverability** — With their short wheelbase, Load-Packers turn easily in narrow T-alleys, drive safely through traffic, maneuver quickly at the dump.
- **Fast compacting** — Load cycle requires only 5 seconds of operator's time. All he does is hold lever to shut ram-door. Compaction is completely automatic at all times.
- **Greater safety** — All compacting done within body. Door floats shut . . . can be stopped by hand or by releasing lever. Safety shields protect fingers and hands.
- **Dumps clean, fast** — Simple, trouble-free hoist lifts body quickly to 50° angle. Load falls free . . . streamlined, tapered body readily sheds all material.

Ask your friends who saw the new big capacity Load-Packers at the Public Works Congress at Atlantic City, Sept. 19-22, 1954

*Load-Packer is the registered trademark of GarWood Industries, Inc. GW-LP-3r

GAR WOOD GW INDUSTRIES

GARWOOD LOAD-PACKERS

now serving over 39,000,000 people in 2,500 communities.
Made in Wayne, Michigan, and Richmond, California,
by GarWood Industries, Inc.

DURABLE

"CENTURY®" PIPE

is made of asbestos fiber and portland cement—two almost indestructible materials that have been known to endure ever since antiquity. And this quality of durability means extra long life. And *that* means money saved.

Consider the many other distinct advantages of "Century" pipe and you'll see why more and more thrifty towns are choosing it—why it's the wise choice for your community, too.

Write for further information now.

QUALITIES THAT MAKE "CENTURY" PIPE ECONOMICAL, TROUBLE-FREE, LONG-LIVED

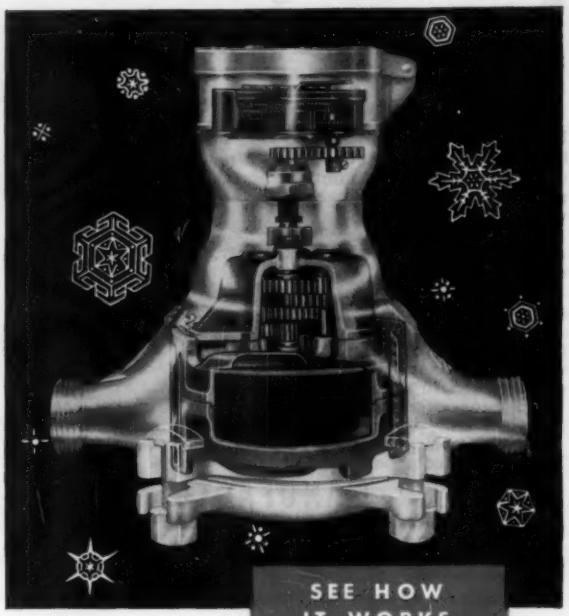
1. NON-TUBERCULATING
2. NON-CORROSIVE
3. EXCEPTIONALLY STRONG
4. DURABLE
5. IMMUNE TO ELECTROLYSIS
6. TIGHT JOINTS
7. SMOOTH BORE
8. LIGHT WEIGHT
9. EASILY, QUICKLY LAID
10. LOW COST

KEASBEY & MATTISON COMPANY • AMBLER • PENNSYLVANIA

K&M best in asbestos ®

Nature made asbestos . . . Keasbey & Mattison has made it serve mankind since 1873

Q- What happens when a Rockwell-Empire Type 12 Meter FREEZES?

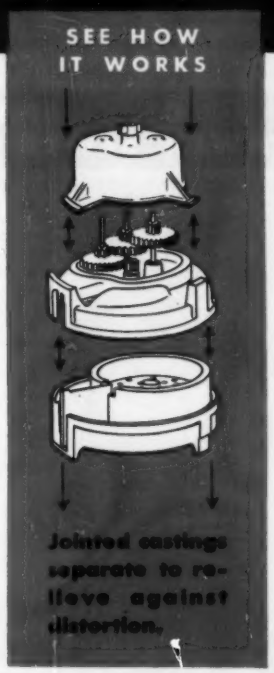


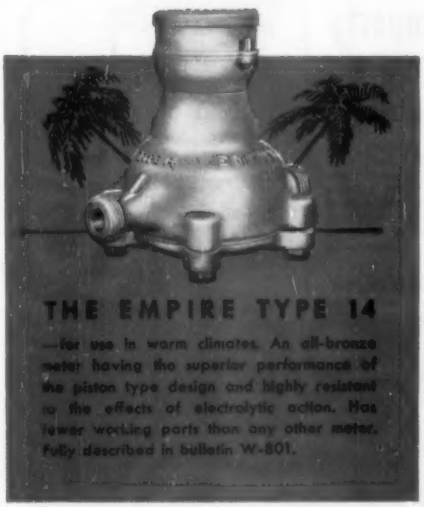
A-

All interior parts SEPARATE to prevent damage!

In this meter the internal castings are jointed and held together without the use of screws or bolts. Thus, when the meter freezes and the frost bottom breaks, all the parts separate and are free to move with the expanding ice. There is no strain or distortion such as can occur in meters either having parts bolted together or with assemblies that are directly attached to the meter case.

Ask your Rockwell representative to demonstrate this and the many other money-saving, revenue-building features in the Empire Type 12 design, or write for bulletin W-802.




THE EMPIRE TYPE 14
—for use in warm climates. An all-bronze meter having the superior performance of the piston type design and highly resistant to the effects of electrolytic action. Has fewer working parts than any other meter. Fully described in bulletin W-801.

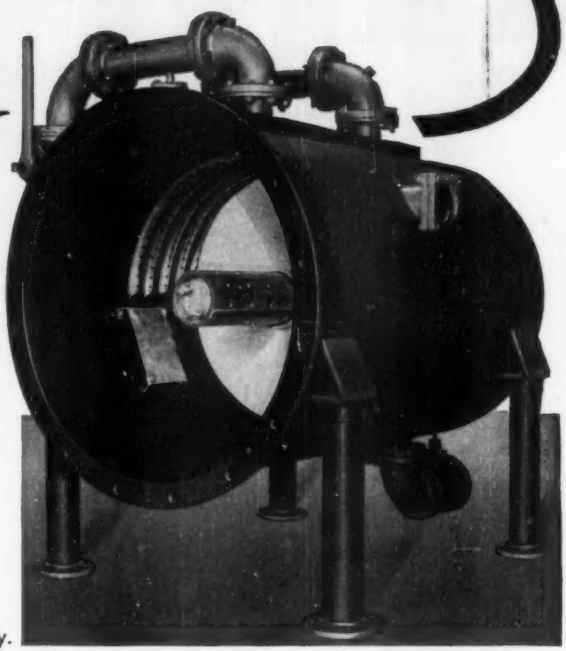
The Symbol for Service, Quality and Performance in Water Meters

ROCKWELL MANUFACTURING COMPANY

PITTSBURGH 8, PA. Atlanta Boston Chicago Houston Los Angeles N. Kansas City New York Philadelphia Pittsburgh San Francisco Seattle Tulsa

In Canada: Peacock Brothers Limited

A new trend in municipal water filtration—
The SPARKLER DIATOMITE FILTER MODEL SCJ
has been highly successful in installations now in operation



Reduced operating cost due to long filtering cycles and fast backwash cleaning, together with a remarkably low bacteria count requiring a minimum of chlorination, are features that make this new type filter worthy of the attention of all waterworks engineers.

Practically any volume of city water can be filtered economically in the Sparkler SCJ filter. Single units capable of handling 5,000,000 gallons of water a day are available. Multiple units can be engineered into a system for larger requirements.

Less than 0.2% of water is required to backwash and clean the largest filter units and a complete fresh precoat of diatomite can be applied and the filter ready to resume operation in 15 minutes.

Operators can be easily trained, no highly skilled specialized personnel is required to insure efficient performance.

Write for plans and prices on your requirements. Address Dan Baldwin for personal service.

SPARKLER MANUFACTURING CO.

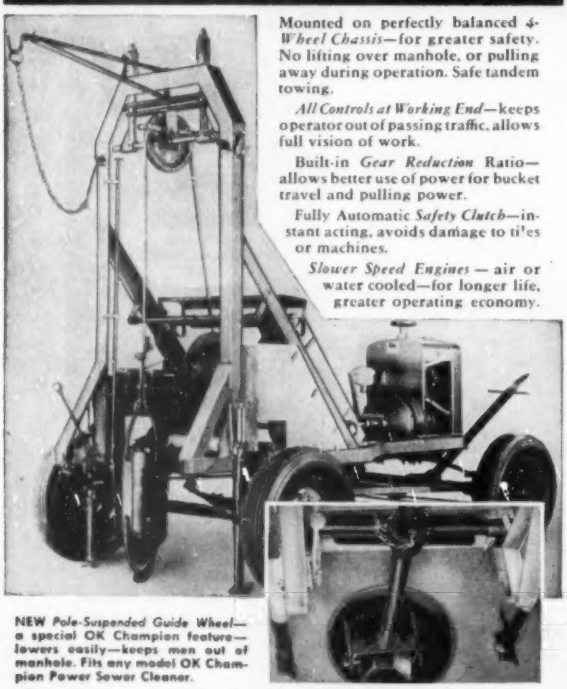
Home office and plant, Mundelein, Ill.

EUROPEAN PLANT
Prinsengracht 876
Amsterdam, Holland

CANADIAN PLANT
Galt, Ontario

Manufacturers of industrial filters for over a quarter of a century.

OK CHAMPION POWER SEWER CLEANERS



Mounted on perfectly balanced 4-*Wheel Chassis*—for greater safety. No lifting over manhole, or pulling away during operation. Safe tandem towing.

All Controls at Working End—keeps operator out of passing traffic, allows full vision of work.

Built-in *Gear Reduction* Ratio—allows better use of power for bucket travel and pulling power.

Fully Automatic *Safety Clutch*—instant acting, avoids damage to tires or machines.

Slower Speed Engines—air or water cooled—for longer life, greater operating economy.

NEW *Pole-Suspended Guide Wheel*—a special OK Champion feature—lowers easily—keeps men out of manhole. Fits any model OK Champion Power Sewer Cleaner.

Write for latest OK Champion Circular

CHAMPION CORPORATION • 4716 Sheffield Ave. • Hammond, Ind.

Public Property PROTECTION is our business

For your protection Stewart produces chain link wire and iron picket fence; wire mesh partitions; wire window guards; steel folding gates. Also flagpoles; settees; bronze plaques and other metal specialties. Write for catalogs. Please mention products in which you are especially interested.

THE STEWART IRON WORKS CO., INC.
2121 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrications since 1886

Stewart IRON and WIRE FENCES

GOES THE COST OF TRAFFIC CONTROL

when you put these KARPARK meters on the job!

KARPARK TWIN-O-MATIC
Times two cars. Reduces maintenance and collection costs. Adjustable to any desired changes.

KARPARK UNIMATIC
For single car parking. Can be used for an entire system, or with TWIN-O-MATIC for special locations.

The experience of many cities — large and small — throughout the nation, has proven that Karpark Meters will bring down the costs of traffic control. They'll bring yours down, too. Here's why —

❶ LOW - COST INSTALLATION — quick and easy. No skilled labor required.

❷ LOW - COST MAINTENANCE AND REPAIRS — made for accurate timing and rugged durability by the craftsmen who make famous Herschede clocks. Operate efficiently under all weather conditions with minimum service.

❸ LOW - COST LAW ENFORCEMENT — highly visible dial makes police officer's job faster, easier.

❹ LOW-COST COLLECTIONS—Karparks are available with automatic dump systems, sealable boxes or open top boxes and in a wide variety of coin combinations and time intervals.

FOR COMPLETE DATA WRITE TO
KARPARK CORPORATION
Cincinnati 6, Ohio

IN CANADA
TWIN METER CO. OF CANADA LTD.
5002 Park Avenue
Montreal 8, Quebec

WITH TRIDENT YOU

MODERNIZE AS YOU REPAIR

. . . at only a fraction of the cost of new meters

It's easy . . . and a proved economy . . . to keep your Trident water meters up to date. Parts made for modern Tridents, embodying every thoroughly tested advancement known to the science of metering, are designed to fit into any Trident water meter of the same size and type . . . no matter how old. Every time you replace worn parts with genuine Trident parts, the meter's ready for many more years of accurate service . . . at only a fraction of the cost of scrap-and-replace programs.

No need to keep complicated stocks of parts for many models. Just keep the latest Trident parts on hand. Reordering and stock control are simple, and your meters never become obsolete. Training service men is easy, too. Not only is the Trident extremely simple and virtually fool-proof, but also your service men need learn only one model.

This 50-year policy of Trident is your best assurance that the meters you buy today will earn maximum revenue for your utility . . . with lowest yearly costs . . . for many years to come.

NEPTUNE METER COMPANY
19 West 50th Street • New York 20, N. Y.

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Branch Offices in Principal American and Canadian Cities

neptune

258

An aerial view of the Orange County sewage-treatment plant while it was still under construction. Here is located the nation's most supersensitive pump-control system.

Sewage-Pump Controls Have Cat's-Whisker Sensitivity

Orange County (Calif.) Sanitation District abolishes a wet well to build the nation's most sensitive raw-sewage pumping station

THE story is that if a man spits into the receiving channel of the big new Orange County sewage-treatment plant, the pump-control system knows it and sends a signal to the relays. Some even claim that the controllers send warning signals every time a cloud passes over.

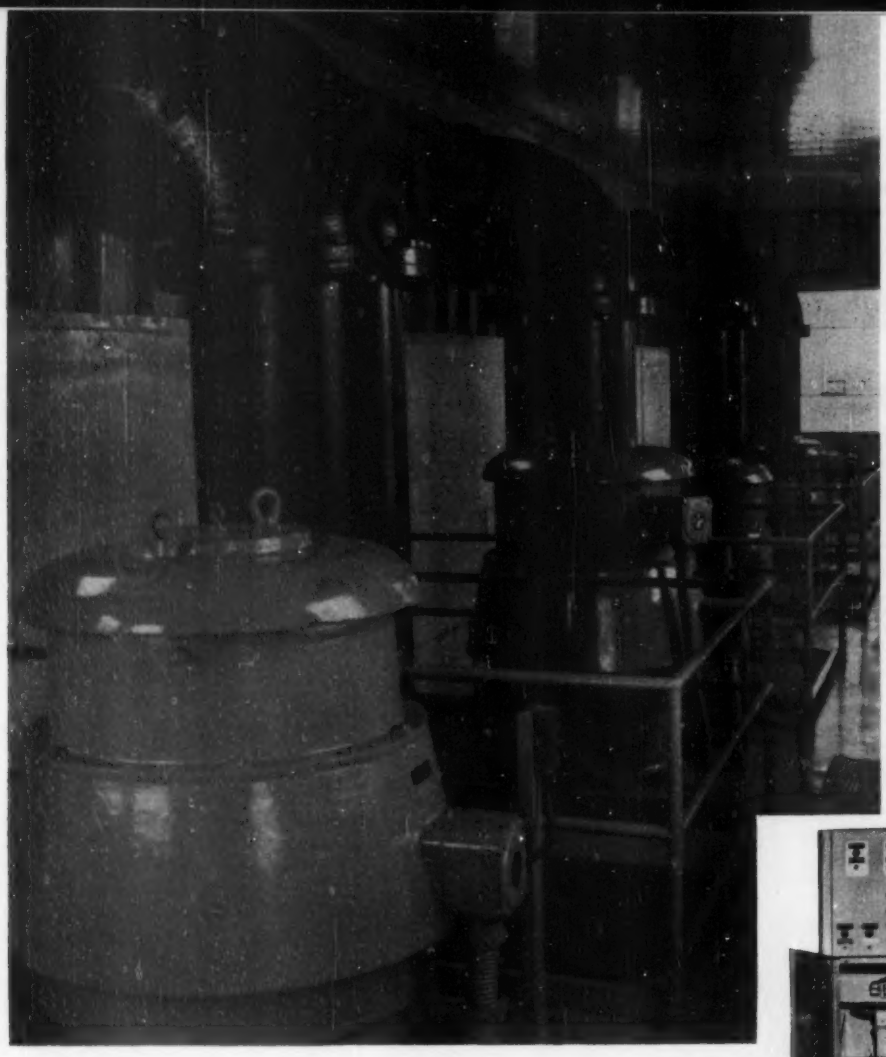
This supersensitive pump-control system came into being because of local high groundwater conditions that made the customary raw-sewage wet well expensive and difficult to build. Even without the wet well, the designers had to build the receiving channel in the form of an inverted "T," backfilling the cross-arms to prevent the channel from floating.

Wet Well Ruled Out

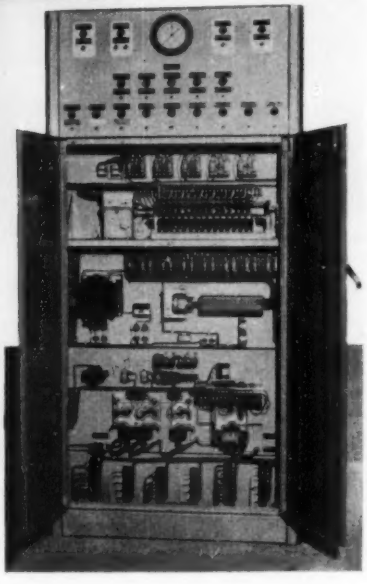
The controls also help the treatment of the sewage. By ruling out the wet well, the designers were able to hurry the sewage to the primary settling tanks without a stopover prior to pumping. This procedure checks septic action that takes place quickly in the warm California area. The new plant has a capacity of 30 mgd and provides primary treatment.

This supersensitive control system is located immediately behind the receiving channel, where two Link-Belt Thru-Clean bar screens operate. Four Fairbanks-Morse angle-flow, raw-sewage pumps take suction by direct connection to this channel.

The No. 1 and No. 2 pumps each have four speeds of 2½, 5, 7½, and 10 mgd; No. 3 pump has four speeds of the fluid constantly uniform. pump has a constant speed of 20



These four pumps take their suction from a channel without the need for a customary wet well. The small control panel (below) governs the action of the pumps.



mgd. All operate against a head of 27 feet.

The pumps discharge through siphons into an effluent channel. From there, the sewage passes through an aerated grit chamber to a Parshall flume that measures the total flow, and then proceeds to the sedimentation basins. Eventually, the purified sewage finds its way to the ocean.

The absence of a wet well means that the pumps have to take the delivered sewage at a speed ranging from 2½ to 60 mgd. A 2-inch change in elevation on the suction side of the pumps puts the control system into full operation. A ⅛-inch change is detected by the balance-amplifier sensing apparatus.

Bubbler Control

The system operates around a "bubbler" type of control, a Bubbltrol unit made by the Automatic Control Company, of St. Paul, Minn. A bubbler tube in the channel senses changes in the fluid level and activates the pumps to keep the level of the fluid constantly uniform.

While this bubbler system is not new, this type of plant-control installation is unusual because it follows the principle of continuously balancing the water level by means of a balance amplifier rather than by the older "step" method. Moreover, the bubbler is not affected by fats and oils, or by freezing weather—a hazard which need not concern Orange County. The bubbler also eliminates danger of explosive gases, since no electrical circuits are utilized in sensing liquid levels.

The Bubbltrol forces air through the vertical pipe placed in the sewage flow at a predetermined level. Bubbling occurs at a rate of 60 to 80 bubbles per minute between normal low- and high-water elevations on the suction side of the pumps. The operators can adjust the rate of bubbling from the control panel if they desire. A continuous-duty air compressor, mounted in the panel, supplies the air to the bubbler. In addition, an auxiliary bottled-gas supply will serve the bubbler tube if the compressor supply should drop below a value of 2 pounds per square inch.

Sensitive pressure units in the control panel detect the slight changes in sewage elevation through changes in air pressure caused by the variations in head above the end of the bubbler tube. These activate an electromagnetic pump-start selector to provide the required pumping capacity.

In addition to the control of the pumps themselves, the system pro-

vides alarms for the following critical conditions:

1. Sewage flows either below or above the designed high and low levels.

2. Emergency low level, at which point all the pumps will be locked in the stop position and must be reset manually.

3. Failure of the control compressor, signifying that the emergency bottled-gas supply is in use.

The control system also uses an automatic device to alternate the starting sequence of the two 10-mgd pumps. The alternator permits the operation of both units, alternately and simultaneously, as required by the pumping schedule (see table).

Pump Programming *

Elevation	Start	Stop	Running	MGD
—10.00	2/4		4/1, 3/4, 1/4, 2/4	60
—10.17	2/3		4/1, 3/4, 1/4, 2/3	57.5
—10.34	2/2		4/1, 3/4, 1/4, 2/2	55
—10.50	2/1		4/1, 3/4, 1/4, 2/1	52.5
—10.67	1/4		4/1, 3/4, 1/4	50
—10.83	1/3		4/1, 3/4, 1/3	47.5
—11.00	1/2		4/1, 3/4, 1/2	45
—11.17	1/1		4/1, 3/4, 1/1	42.5
—11.34	3/4		4/1, 3/4	40
—11.50	3/3		4/1, 3/3	37.5
—11.67	3/2		4/1, 3/2	35
—11.83	3/1	2/4	4/1, 3/1	32.5
—12.00	2/4		4/1, 2/4	30
—12.17	2/3		4/1, 2/3	27.5
—12.34	2/2		4/1, 2/2	25
—12.50	2/1, 4/1	3/4	4/1, 2/1	22.5
—12.67	3/4		3/4	20
—12.83	3/3		3/3	17.5
—13.00	3/2		3/2	15
—13.17	3/1	1/4	3/1	12.5
—13.34	1/4		1/4	10
—13.50	1/3		1/3	7.5
—13.67	1/2		1/2	5
—13.83	1/1		1/1	2.5

* Both pump and speed indicated, i.e., 2/4 designates No. 2 pump at fourth speed.

Unit Mounting

The Bubbltrol unit is mounted in a free-standing cubicle finished in hammer-tone gray. The control panel contains a "hands off — automatic" switch for the constant-speed pump, and three rotary drum switches of the pistol-grip type for each of the three variable-speed pumping units. This equipment permits complete manual operation when necessary. Individual pump-running lights are furnished for each pump and speed point. The control panel is also provided with a pressure-type gauge that visibly indicates the sewage level on the suction side of the pumping equipment at all times.

The plant is operated by the Orange County Sanitation District, and is located at Huntington, Calif. It was designed by Headman, Ferguson & Carollo, consulting engineers of Phoenix, Ariz.

Films for Municipal Officials

FILMS not previously listed which may be of interest to the municipal engineer and other officials include:

STREET CONSTRUCTION

The Dotmar Curb

16mm. Sound. Color. 11 min.

Illustrates the use of the Dotmar Speedmaster curb, gutter, and sidewalk paver that makes this type of work mechanical, instead of a hand operation.

Available on loan from the Dotmar Industries, Inc., 502 Hanselman Bldg., Kalamazoo, Mich.

Stretching Highway Dollars with Rubber Roads

16mm. Sound. 42 min.

Covers latest experiences in rubber road laying here and abroad. A complete remake of former film of same title which includes laboratory and road-laying scenes never before shown.

Available on loan from Natural Rubber Bureau, 1631 K St. NW., Washington 6, D. C.

Soil Bituminous Stabilization

16mm. Sound. Color. 20 min.

Shows each step in the processing of soil bituminous base, using the P & H single-pass processing method.

Available from B. Germerschausen, Photographic Department, Harnischfeger Corporation, 4400 W. National Ave., Milwaukee 8, Wis.

These Users' Views

16mm. Sound. Color. 25 min.

Illustrates more than 30 different excavating, loading and material handling jobs using the Bucyrus-Erie line of ⅜- to 4-cubic-yard general purpose excavators and cranes.

Available on loan from Bucyrus-Erie Company, Publicity Department, South Milwaukee, Wis.

MISCELLANEOUS

The Waters Around Us

16mm. Black and White. Sound. 25 min.

Relates the origins of the pollution of New York City's waters going back three centuries and the program adopted and entrusted to the Department of Public Works for its solution. Story is told in terms of one of three pollution control projects completed and put into service during 1952.

Available on loan from Ernest Neufeld, Department of Public Works, Municipal Bldg., New York, N. Y.

Leaf Collection and Disposal

16mm.

Portrays Cincinnati (Ohio) leaf-gathering program, using a three-wheeled Scoopmobile, which enables crew to dispose of leaves in quarter of time required by other methods. Cost, too, dropped one-half, although unit costs for labor and equipment have risen.

Available from Division of Highway Maintenance, Department of Public Works, Cincinnati 2, Ohio.

Give Yourself the Green Light

16mm. Sound. Color. 26 min.

Discusses shortcomings of streets and highways; needs for better farm-to-market roads, urban thoroughfares, superhighways; problems of small-town traffic and big city congestion; and universal lack of parking facilities.

Available on loan from Department of Public Relations—Film Library, General Motors Corporation, General Motors Bldg., Detroit 2, Mich.

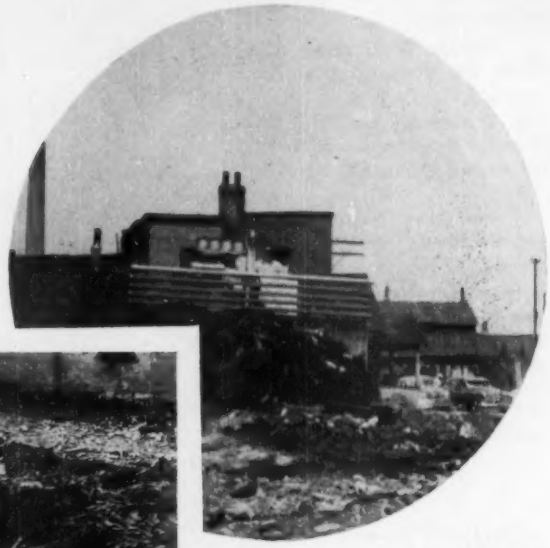
Operation 150

16mm. Sound. Color. Animation. 30 min.

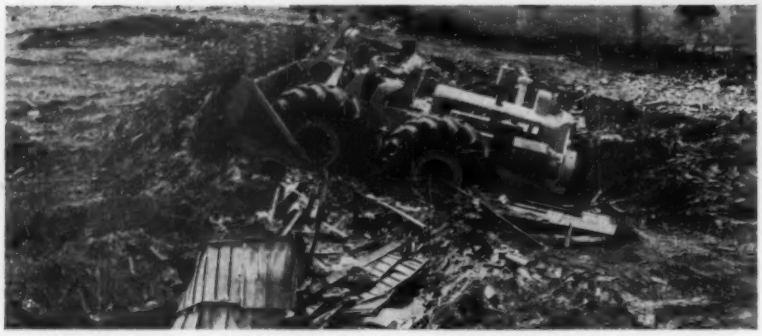
Illustrating the important role of the modern aluminum gas meter in home and industry; equitable method of billing; design, assembly, and operation of a diaphragm-type domestic gas meter; animation sequence showing how measurement of gas is accomplished.

Available from Rockwell Manufacturing Company, Pittsburgh 8, Pa.

One-Man Cleanup Crew



Here's the rubble-laden lot before the cleanup—a blight to any neighborhood.



The first step in the cleanup was to scoop out a large hole, *a la* sanitary fill.

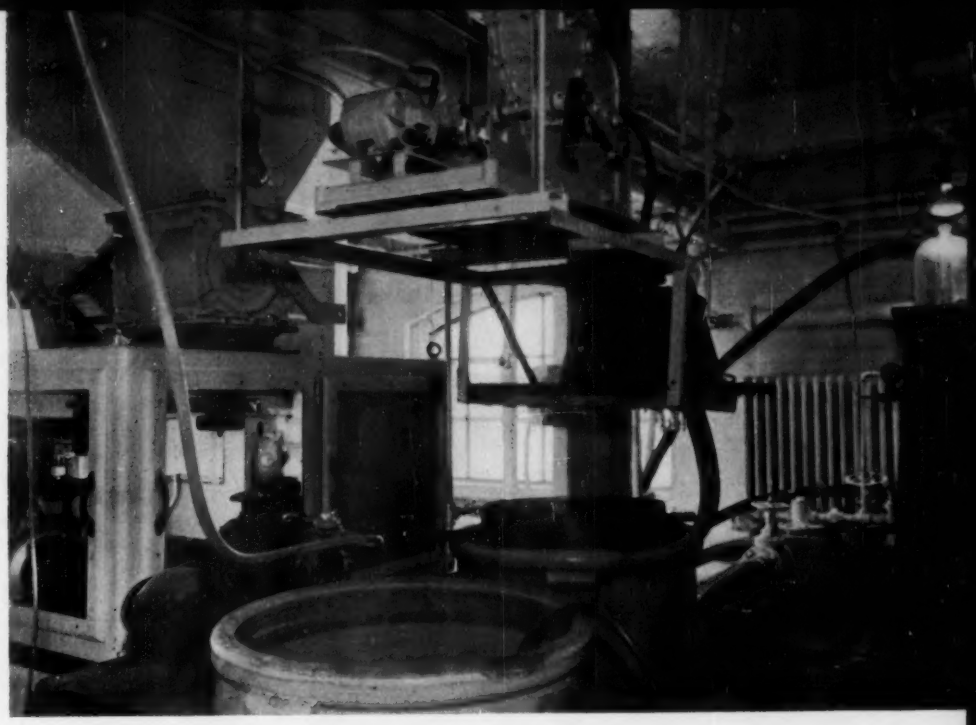
A new single-unit machine demonstrates its versatility and aptitude for many municipal cleanup jobs

CHICAGO recently learned how one man with the proper equipment can transform an ugly, blighted, rubble-strewn lot into a trim, potentially attractive park site. This work was done without the need for expensive, labor-consuming loading, hauling, and trucking.

The equipment that performed this labor-saving trick was a Le Tourneau-Westinghouse rubber-tired Tournatractor which was demonstrated by the Illinois Contractors Machinery Company, of Melrose Park, Ill.

City officials watched the rig scoop out a large hole in the center of the lot and pile the earth on one side. Then the machine shoved the rubble and other debris into the excavation, buried it, and leveled the lot, leaving exposed a surface of trim, easily handled top soil. The equipment then shifted into high gear and proceeded to the next site, traveling on low-pressure tires that caused no pavement damage.

The next step (left) involved pushing rubble, rubbish, and other debris into the hole and packing it solidly. Finally, the lot was leveled (right) and neatly trimmed ready to be made into a neighborhood park or a playground for small children.



Chemical feeding may look complicated here, but it actually isn't. At left are the alum feeders; lower center, the Proportioneers pump that feeds Calgon; upper center, a converted Infico lime feeder that is now used for ferric sulphate; right background, a Wallace & Tiernan chlorinator.

Split Treatment Slices Cost

Cedar Rapids water department overcomes high chemical costs

By LEO LOUIS*

THE year 1953 was notable at the Cedar Rapids (Iowa) Water Department. It marked the fiftieth anniversary of the purchase of the water works by the city from a private corporation. Reviewing our progress, we find that a comparison of 1903 and 1953 data reflects the great strides our city has made in supplying water to 73,000 residents.

	1903	1953
Miles of water mains	39	186.319
Number of hydrants	228	1,447
Number of meters	793	20,162
Number of services	3,228	19,824
Total pumpage	837,237,329 gals.	3,383,157,000 gals.
Average daily pumpage	2,293,774 gals.	9,268,923 gals.
Value of property	$473,000	$4,000,000
Water sales	$56,047.23	$665,605.85
Operating expense	$24,000	$425,000

* Mr. Louis was superintendent of the Cedar Rapids (Iowa) Water Department at the time that he prepared this article. He is now vice-president and general manager of the Gary-Hobart Water Corporation, of Gary, Ind.

In 1953, the Cedar Rapids Water Department spent $126.40 per 1,000,000 gallons to pump, purify, soften, and distribute water. This operating expense accounts for 64% of the total income from water sales; the balance was used for capital investment, depreciation, and sinking fund payments. Water-sales revenue averages $196.74 per 1,000,000 gallons pumped, or $33.58 per customer served.

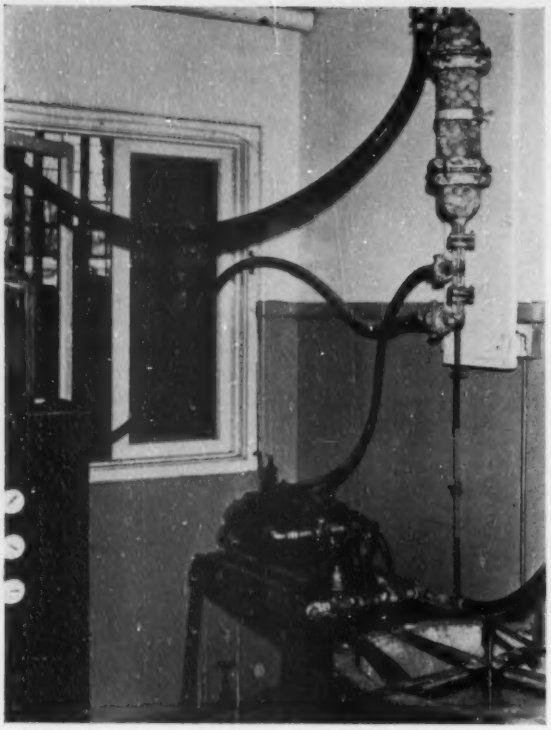
The cost of operation increased slightly over the average cost of $126.09 per 1,000,000 gallons in 1952, but this can be attributed mostly to a 5-cent per hour wage increase to all employees, and to an over-all chemical cost increase from $23.80 per 1,000,000 gallons in 1952 to $24.07 in 1953.

The chemical cost applies to 13 different types of chemicals ranging from lime at $7.83 per 1,000,000 gallons treated to sodium chlorite at only 6 cents. The average cost of chemicals would have been much higher in 1953 because of price rises of 5% to 25% on practically all chemicals but for a change in treatment procedures instigated during the year by Ben Coates, plant superintendent, and Arnold Cherry, plant chemist.

The change was made possible by a plant-construction project, complete in 1951, which permits considerable flexibility of operation. The plant supervisors experimented with split treatment and sludge return and, during the last eight months of 1953, found that no recarbonation was necessary to stabilize the water ahead of filtration. Our savings for this eight-month period were:

Lime	$4,864.70
Fuel oil	2,120.98
Electric power for compressors	1,922.30
Total	$8,907.98

The fuel-oil savings is important in the summertime



Chlorine dioxide generators, neatly and compactly assembled in this plant, are standard equipment for this treatment.

when it is not necessary to fire boilers for heating purposes. This treatment method also will result in considerable maintenance economies for boilers, compressors, and scrubbers.

Water-Treatment Problems

Cedar Rapids obtains its water from the Cedar River. The water is "flashy" and frequently troublesome to treat, particularly in the spring when taste, odor, and color difficulties arise. The raw water has an average total hardness of just under 200 ppm (parts per million); softening with lime, and soda ash when necessary, reduces this to about 90 ppm. Its coliform index, in terms of its "most probable number" per 100 milliliters is sometimes as high as 11,000, but the treatment results in a "zero" index.

Artificial fluoridation—a dental health measure—was begun in April 1952 to raise the natural fluoride of the river water from 0.2 ppm to 1.0 ppm. During 1953, both sodium fluoride and sodium silicofluoride were used at an average cost of 90 cents per 1,000,000 gallons. The type of chemical used was changed early in the year, and it is planned to use only silicofluoride in the future. A Wallace & Tiernan volumetric feeder is used for the chemical.

Three American Well Works low-lift, centrifugal pumps rated at 22 mgd (million gallons daily) pump the raw water for a distance of 4,500 feet from a concrete suction well near the river's edge to the filtration plant. A new Fairbanks-Morse 10-mgd, vertical, mixed-flow type of propeller pump has been purchased and will be installed in 1954 directly over the suction well.

At this point, activated carbon is fed by an Omega Rotolock volumetric feeder, and copper sulphate is introduced by a homemade solution pot. Both chemicals are our first line of defense against bad taste and odors. They are used intermittently according to need, but carbon is used generally throughout the year, while copper sulphate is most effective in the hot summer months when algae counts are highest. Both are effective and well worth the cost which averages $3.62 for nearly 50 pounds of activated carbon per 1,000,000 gallons of water, and 15 cents for slightly more than 1 pound of copper sulphate per 1,000,000 gallons.

Activated carbon is also fed in the middle of the settling phase of the treatment process through two homemade solution feeders. The cost and dosage at that point is included in the preceding figures.

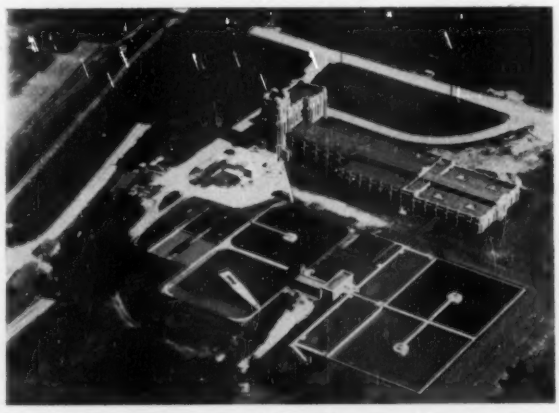
The real key to the operation of the plant is in the flexibility of the mixing basins and clarifiers. We have four slow-mix units and four clarifiers equipped with Dorr sludge-removal equipment. These units can operate in parallel pairs; the two newest basins also can operate in series. The four basins permit a theoretical six-hour detention time at a 24-mgd flow.

Lime and alum are ordinarily introduced into the raw water ahead of the first set of clarifiers. Under the split-treatment method, lime and alum are added to part of the flow, and alum alone to the remainder. The two separately treated waters are settled in the first set of parallel basins and then combined ahead of the second set of mixing basins which are equipped with Jeffrey Floctrol mixers.

Return sludge from either set of basins, chlorine, ferric sulphate, activated carbon, and soda ash, if needed, are mixed with the water by two International Engineering high-speed, propeller-type mixers immediately ahead of the Jeffrey slow-mix units.

Better Feeding Equipment

Feeding equipment for these chemicals has been a great problem because of lack of installation space, but a program is now under way to provide more space for chemical storage and feeding equipment. The old wash-water tanks originally installed in the tower of the plant is being reconstructed to serve as a lime storage bin. The two present lime tanks will be used for alum and soda ash. A new concrete, wash-water tank was constructed on a hillside outside of the plant. New Omega gravimetric feeders will be installed to



The effect of the money-saving split treatment shows up clearly in the settling basins of the Cedar Rapids water plant.

feed the alum and lime used for treating the water.

The cost of the lime for softening is our biggest chemical expense. An average of nearly 1,000 pounds of lime per 1,000,000 gallons of water treated is required at an average cost of $7.83. The average alum dosage in 1953 ran only 260 pounds per 1,000,000 gallons at a cost of 87 cents. Soda ash is used intermittently, and was limited to an average annual use of only 32 pounds per 1,000 gallons at a cost of 59 cents.

Multiple Chlorine Dosages

Chlorine can be added to the raw water, to the settled water between the clarifiers, and to the filtered water by means of three Wallace & Tiernan chlorinators, in quantities ranging from 100 to 5,000 pounds per day. It can be used alone; it can be combined with sodium chlorite to form chlorine dioxide; or it can be combined with anhydrous ammonia. The condition of the stream dictates where and how the chlorine is used. Our average chlorine requirements amounted to nearly 41 pounds per 1,000,000 gallons at a cost of $1.89.

Chlorine dioxide has been used with success to eliminate certain taste and odors caused by algae, but it should be noted that its effects are very specific and not always successful. Its use is governed by a more or less "cut-and-try" procedure when high odors are discovered by laboratory personnel.

Little sodium chlorite was fed in 1953; its use was limited to an average of only 0.09 pounds per 1,000,000 gallons at a cost of 6 cents. The chlorine dioxide generators are standard equipment supplied by the Olin Mathieson Chemical Corporation. These are used with two of the Wallace & Tiernan chlorinators and two Proportioneers pumps to generate the chlorine dioxide which can be applied either to the raw or filtered water.

Anhydrous ammonia is fed through a Wallace & Tiernan ammoniator during the warm months of the year to change "free" chlorine residuals to combined chloramine residuals. When ice is present on the river, the ammonia nitrogen content in the raw water is relatively high, and "free" chlorine residuals are not carried through the plant. The ammonia dosage averages only 2 pounds per 1,000,000 gallons at a cost of 36 cents.

Sulphur dioxide has been used only during the spring runoff when taste and odor troubles are the worst. It has effectively reduced chlorine residuals when chlorine seems to accentuate the odor condition. The gas is fed through one of the Wallace & Tiernan chlorinators, at a cost of 14 cents for 0.42 of a pound per 1,000,000 gallons.

Sodium hexametaphosphate (Calgon) has been most effective in stabilizing the water in the distribution system and preventing "red" water, or corrosion problems. The chemical is introduced into the plant effluent with the sodium silicofluoride solution and also at a booster pumping station on the distribution system by means of Proportioneers pumps. Phosphate dosage cost 68 cents for 5.7 pounds per 1,000,000 gallons.

After chemical treatment, the clarified water passes through any of eight rapid sand filters, each rated at 3 mgd, based on a filter rate of 2 gpm per square foot. Four of these, constructed in 1951, have Simplex rate-of-flow controllers and are equipped with a fixed-pipe, grid-surface wash system, while the four older filters, equipped with Infilco controllers, do not yet have surface-wash equipment.

Pumping equipment will have a reinforcement when the recently purchased DeLaval 10-mgd, centrifugal pump is installed.

1,000,000-Gallon Clear Well

The filtered water flows to a 1,000,000-gallon clear well from which three American Well Works high-service, centrifugal pumps, with a combined capacity of 22 mgd, deliver it to the distribution system against an average pressure of 73 pounds per square inch. A new DeLaval 10-mgd, centrifugal pump was purchased in 1953 and will be installed in 1954. One of the high-lift pumps and one of the low-lift pumps are equipped with Sterling standby gasoline engines. Provisions will be made for the installation of a standby engine on the new high-lift pump in the future. Pumping costs averaged about 12½% of the total operating costs, or $14.90 per 1,000,000 gallons.

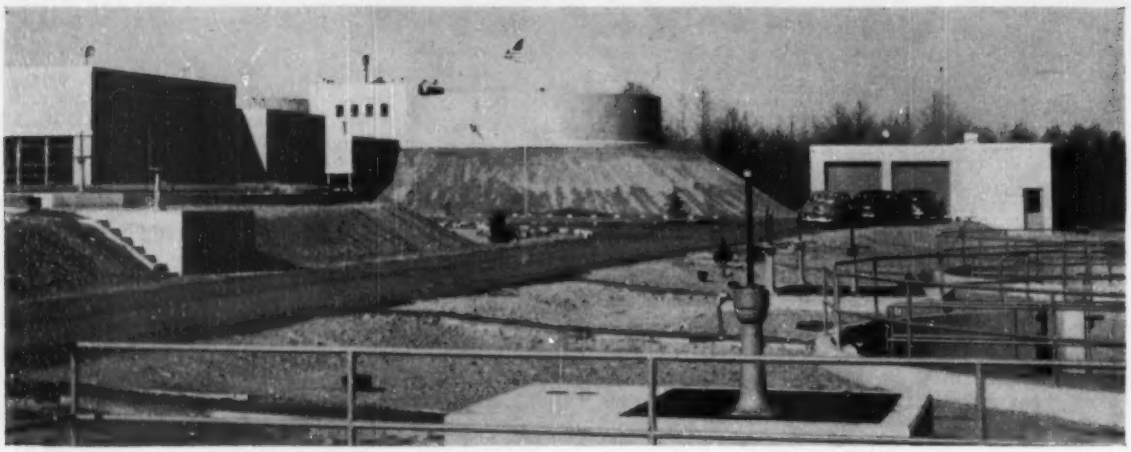
The cost of power was less than in 1952 due to the construction of a new 24-inch supply main from the plant, across the Cedar River, and to the west side of the city. This main delivers water at a lower pumping head and reduced power consumption from 1,310 kwhr, in 1952, to 1,260 kwhr per 1,000,000 gallons, in 1953. Our power costs average 0.0118 of a cent per kwhr.

100% Metered System

The plant delivers water to almost 20,000 customers who used an average of 9.27 mgd in 1953. The services are 100% metered. The peak day in 1953 required a pumpage of 15,500,000 gallons, which was over 2 mgd higher than any previous record day. Each of the citizens of Cedar Rapids used an average of 128.39 gallons per day during the year and the city was served by 186 miles of mains, 1,447 fire hydrants, and 3,125 valves.

Approximately 75% of the total pumpage was accounted for by customers' meters. Slightly over 5% was used in plant processes and filter washing, and the other 20% can be attributed to public use—street and sewer flushing and supply to public buildings, fires, meter under-registration, leaks, and other unaccounted-for use. This unaccounted-for use was higher in 1953 than in 1952 because of a leak in the new 24-inch supply main. After the leak was repaired, the unaccounted-for percentage decreased.

Statistics for the department are charted each month, as well as at the end of the year, from reports submitted to the superintendent from various department heads, enabling us to analyze operating costs.



The working features of the plant have been designed to a compact arrangement.

Townships Consolidate Sewerage Systems

By DAVID J. GALLIGAN, *Secretary, Governmental Affairs Committee*
Trenton Chamber of Commerce, Trenton, N. J.

RESIDENTS of Ewing and Lawrence Townships in Mercer County, N. J., are gradually scrapping their cesspools and septic tanks and hooking up to a consolidated sewerage system that serves 4,000 to 5,000 homes, approximately 75% of the townships' total population. The rates established for making connections are designed to carry current and capital costs of the system, which was financed by a $6,750,000 bond issue. The system required 18 months to be built.

All residents, except those connected with the Trenton system, must pay a $75 connection fee, as well as a $3 inspection fee for the plumbing work involved in each hook up. Sewer-service revenue will support plant operation and the collection system.

Before deciding to consolidate, both townships made an exhaustive study of the possibilities of building individual systems. In 1943, Ewing Township officials conducted engineering studies to determine the cost of construction and method of financing, but because of material shortages the survey was abandoned temporarily.

Additional engineering studies made by the New York firm of Buck, Seifert & Jost satisfied the township fathers that consolidation would be the best answer to the townships' sewerage needs and would allow economy in both construction and operation. In order to implement the program, in 1947 an ordinance was passed that set up a sewerage authority for the two townships.

Distribution System

About 87 miles of the system's piping has been installed in such a way that will allow easy expansion to accommodate future developments. The system can be enlarged 100% without altering any existing piping or structures.

The sewage receives complete treatment. Raw sewage enters the plant from a collection system and proceeds through a bar screen and Chicago Pump Company comminutor into a wet well where it is lifted by four Worthington pumps to two Dorr primary clarifiers. Each pump is rated at 2½, 4, 6, and 10 mgd. The wet well is divided into two compartments which are separated by sluice gates.

The sewage first flows to the primary settling tanks where the settleable solids are removed. The effluent then passes from the primary settling tank through two Dorrco distributors serving high-rate trickling filters for further purification. The sewage then proceeds through Dorr secondary clarifiers and finally through chlorinated contact tanks for sterilization and ultimate discharge into Assunpink Creek, a tributary of the Delaware River.

After separation of the solids and fluids, the former are picked up by two Chicago Pump Company Duplex sludge pumps and passed through a Pacific Flush Tank heating unit. Through the action of the anaerobic bacteria, the solids are reduced to an inert mass. A Fairbanks-Morse recirculating pump keeps a steady 90° temperature in the Pacific Flush Tank digesters.

As the sludge passes through the digestion stage, gas is formed and collected for use in heating the building. Upon completion of the digestion process, the solids are drained from the two digesters and carried to glass-covered drying beds for use as a soil conditioner, or finally disposed of in public dumps.

Under ordinary conditions, the plant is capable of handling a base load of 5,000,000 gallons per day. Because of its high-rate design, however, the equipment can bear a very sizable overload for a short period of time.

The authority administering this sanitation facility is composed of six members, three from each township; and the over-all plant maintenance is under the direction of William H. Higgins.

Incinerators and Air Pollution

A smoke- abatement engineer examines the record of incinerators and makes recommendations for the future

The "experts" in the field of incinerator construction create everything from the most inoperative homemade furnace to the most complete unit.

By HARRY C. BALLMAN*
Chairman, Incinerator Committee
Air Pollution Control Association
Pittsburgh, Pa.

THE establishment of a good incinerator, as a functioning unit, involves considerable capital expenditure. Unfortunately, an incinerator does not readily relegate itself to controlled, well-engineered development. Anyone with a few bricks, some cast iron, and a slight knowledge of combustion can, and sometimes does, consider himself an expert on incinerators. Therefore, we find in the field of incinerator construction, everything from the most inappropriate homemade furnace to the most completely designed and engineered units.

The importance of incineration lies in its ability to reduce to an absolute minimum the ultimate residue or waste as ash. If disposal of waste at its source is to be an efficient operation, it behooves us to reduce it to an absolute minimum—as ash. Thereby, we will reduce the cost of labor, handling, equipment, and haulage of such inert residue.

Complete reduction of waste, in addition to reducing costs, allows a broader area for final disposal. For example, inert residue with a minimum of organic matter can be deposited in many areas as a fill without creating a nuisance. On the other hand, residue that is only partially burned and still is extensively organic requires great care in the selection of the site and manner of burial or cover.

To illustrate this matter of an incinerator's inability to reduce refuse to an absolute minimum of ash, I should like to quote from *The New York Times*. Not long ago, the newspaper reported a story about the incineration of certain valuable coupons, stocks, and bonds in the great city of New York: "Special chimneys that carry off the smoke and charred ends of the bond and coupon burning are covered with wire, but there have been cases where bonds only slightly charred have worked through, lifted by heat, and have been offered for payment by people who found them."

Multiple Fuels

One of the great problems of incinerators concerns the multiple fuels used for burning. These will include everything from the wettest material to the driest, from the most volatile material to the most difficult to ignite, from the most closely packed fuel bed to the most spongy and porous—an infinite range of conditions for burning.

We have learned the hard way that, without considerable modification, no one coal-burning unit can possibly burn all of the coals and lignite found in this country. Yet in the incinerator industry, by designing one unit for multiple fuels, we try to do daily that which has been found impossible to accomplish in other fields of fuel burning.

Plant Preparation of Foods

We are most fortunate, however, that, for the last 10 years or so, our cities have been contributing refuse containing more combustible matter and less wet-material content. This is the result of plant preparation of foods, canned foods, and other commercial packaging of foods, a development that is definitely to our advantage.

As a result, it is more nearly possible for us to circumscribe our concept of the refuse to be fired in municipal incinerators. If, in some manner, these wet and dry materials could be thoroughly mixed before being placed in the incinerator unit, it would give the engineer the opportunity to design for an average and consistent fuel.

Many present incinerators are designed for direct dumping from the truck to the furnace chamber. Some do have mixing bins, but they are altogether too small to permit mixing or storing the refuse for an extended period of time. I cannot help but feel that if much larger bins were constructed and crane operators were trained to mix the wet

* Mr. Ballman is executive secretary of the Air Pollution Control Association, 4400 Fifth Ave., Pittsburgh 13, Pa. Formerly, he headed the air-pollution control departments in Columbus, Ohio, and Lexington, Ky.

A good incinerator reduces refuse to a small, inoffensive, easily handled residue.

and dry material so that it becomes a reasonably consistent fuel, we would have far better incinerator operation and acceptance.

Most municipal incinerators are designed to be operated by overfire, or batch feeding. Carelessness of operation in such units, I believe, can be a great contributor to the nuisances of smoke and fly particles. Large quantities of wet materials dropped upon the top of the fuel beds reduce the radiant flame surface momentarily, allowing smoke and odor to occur.

Impact Upon Fuel Bed

The impact upon the fuel bed, in the primary combustion chamber, of batch feeding causes ash throughout the fuel bed to be disturbed and circulate more freely with the combustion gases to the stack. This results in a fly-particle nuisance. Smaller charges would undoubtedly reduce this problem.

Continuous Feeding

Continuous feeding offers an alternate solution. Today, there are several stoker-fired municipal incinerators; one chain-grate arrangement in New York City; one inclined, agitating grate in an old incinerator in Baltimore; and one inclined-grate, agitating-type stoker in a new unit at the Public Health Hospital at Bethesda, Md. These types continually feed the refuse over a rather large grate area. Fresh waste charges can be fed at one end as the ash discharges continuously or semi-continuously from the other, thus keeping the disturbance of the fuel bed at a minimum.

Overfire air—forced or blower type—has not been extensively used on municipal incinerators. Yet when highly volatile substances are fed to such a unit, it is only reasonable to believe that a good, forced, overfire air system would be helpful to control nuisance emissions. Present use of large, port-type, overfire air arrangements only tend to dilute the combustion gases and cool them rather than to cause active burning.

On such units as municipal incinerators there are no fly-ash collectors available commercially. Fly-ash particles from an incinerator have different physical characteristics from those found in the average coal burning equipment. It would not appear practical to use commercial collectors from coal-burning equipment on incinerators without some modification. A great need is present for control of solid matter in stack gases of incinerators.

Flue-Fed Incinerators

Flue-fed incinerators used in apartment houses have always been considered "sick babies" of the air-pollution field. They were not originally designed and even today are not designed to burn the waste material. They are primarily designed as a convenient chute arrangement for the disposal of garbage and refuse. Importance of the burning portion of a flue-fed incinerator has always been considered subordinate to the requirements of health authorities to create enough heat to keep vermin and rodent habitation in such units to a minimum.

Condemnation Recent

Not until very recently have flue-fed units been condemned for the obnoxious effluents emitted from their stacks. Some improvement has been made, but not enough to warrant the effort and expenditure required.

Most engineers are presently coming to the conclusion that it is best to allow flue-fed incinerators to continue to "stew" in the primary chamber. This permits obnoxious effluents to rise to the top of the stack, at which point they are changed in their make-up by application of catalytic agents, high temperature afterburners, gas washers, and other devices that relieve nuisance complaints.

Domestic incinerators are today moving far afield from their direct relation to other incinerator units. Such units are now being considered as household appliances similar to washing machines, gas stoves, or refrigerators. As such, they must be sold as a complete "plug-in" device for use by anyone without prior mechanical knowledge or experience. Unfortunately, nuisance-free operation of the device itself is far behind such present-day practice.

More Research Needed

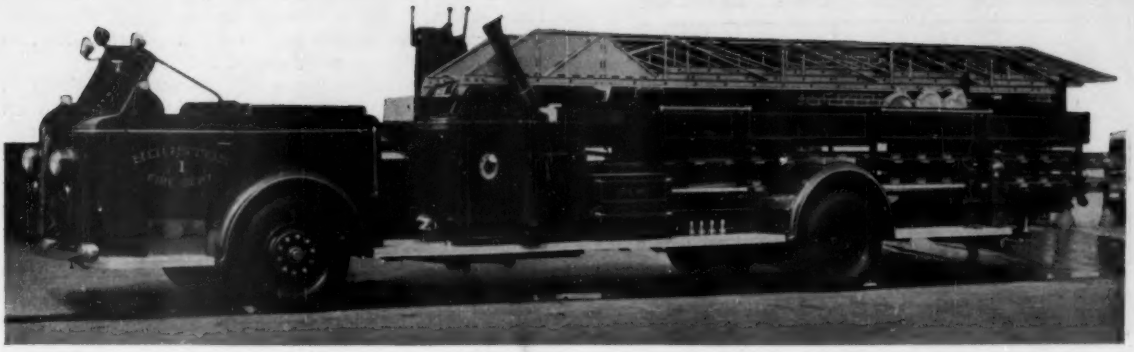
Out of this, we can see a need for more research and data, both by the manufacturers and by the incinerator operators. We need to consolidate whatever data are already available and thus take advantage of the nuisance-free characteristics that now have proved themselves.

We need incinerators able to burn refuse thoroughly so that it becomes inert, nuisance-free ash. We need some way of making the refuse a more consistent fuel. Mixing in a larger storage pit offers one possible solution to this need.

We need to exercise care when firing a batch-type incinerator to prevent disturbing the fire bed. We should watch with interest developments of the continuous-feed furnaces. We will look forward hopefully to more and better fly-ash removal equipment. And we will look forward hopefully, but reservedly, for the development of a truly nuisance-free domestic incinerator.

EDITORIAL NOTE: For additional material on the engineering problems involved in the design and construction of municipal incinerators, see "Incinerator Design," which appeared in the 1954 February and March issues of THE AMERICAN CITY. Reprints may be obtained by writing to the Reprint Department of this magazine.

Incinerator fly ash becomes interesting when it includes negotiable bonds.



One of Houston's two 100-foot American-LaFrance aerial ladder trucks.

Houston's Fire Department Keeps Step With The City's Growth

By J. W. LOBUE, *Fire Chief*

IMMEDIATELY after taking office in November 1953, Mayor Roy Hofheinz asked me for a 10-year expansion program in line with his city-wide policy of anticipating the growth of the City of Houston, Texas. We have just completed this assignment for the Fire Department in two parts of five years each.

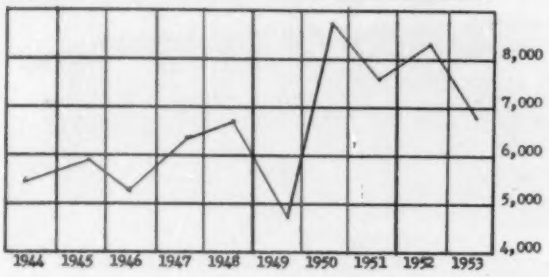
1954 to 1959

Ten major improvements have been worked out for the first (next) five years. Six new stations are needed to cover newly built-up areas. Seven existing stations will be relocated. A new station is needed at our airport. When the new fireboat is ordered, a station must be provided for it, together with dormitory and dock, and land from the Port Commission. All the fire stations are estimated to cost $95,000 each. Two other structures are a $300,000 addition to our repair shop, and our drill tower rebuilt for $250,000.

Fire alarm communications—all Gamewell—will be

The lights on this fire department lighting truck raise and lower hydraulically, and the body is closed when on a run. The G. E. generator that powers the Crouse-Hinds floodlights is a 15-kw, 150-volt A.C., which is powered by a 22-hp Continental gasoline engine.

TREND OF FIRE ALARMS FOR THE TEN YEAR PERIOD 1944 THRU 1953



TOTAL NUMBER OF FIRE ALARMS

1944	5,440	1949	4,875
1945	5,779	1950	8,889
1946	5,315	1951	7,675
1947	6,649	1952	8,289
1948	6,865	1953	6,896

extended to the relocated stations. Each year 300 to 400 fire-alarm boxes are scheduled for installation at a cost of $250,000 per year. Auxiliary power units, costing $2,000 each, will be installed in 16 stations. Apparatus for the new stations will comprise six pumping engines and three aerials. New hose for these stations amounts to 1,800 feet of 1 inch, 3,600 feet of 1½ inch, and 15,000 feet of 2½ inch.

All these capital improvements for the first five years add up to $4,330,182. These sound very nice, and how are they going? The plans for the new stations have been drawn, and the necessary property has been purchased by the Land Acquisition Department. Specifications for the new apparatus were written by last June 1954, and orders have been placed for five 1,000-gpm pumping engines and two 65-foot aerial-ladder trucks and one Ford Sedan for District Chiefs' use. This equipment is for new stations and not for replacement purposes.

1960 to 1964

Seven major improvements include seven new stations, another fireboat and station, and two existing stations rebuilt. Equipment for the new stations will consist of seven pumping engines, two aerials, and 23,500 feet of hose. Fire-alarm boxes are to continue to be installed at a cost of $250,000 per year.

Back to the Present

During the last five years, the department purchased sixteen 750-gpm and ten 1,000-gpm pumping engines. We now have 17 American-LaFrance, 10 Mack, and 6 Seagrave engines. We also purchased two 100-foot, two 85-foot, and two 65-foot aerial ladders, for a present total of eight aerial ladders and six city service ladder trucks.

At the airport we keep a 500-gpm crash truck, which was built in our motor and body shop, and is equipped with foam proportioner, water and foam tanks, and 400 pounds of CO_2. Our radio equipment was manufactured by the General Electric Company.

The department owns 102 Shure Dry salvage covers made by Fulton Bag and Cotton Mills, of Atlanta, Ga. Every ladder truck carries them, giving full salvage coverage to all areas of the city. This is in addition to a centrally located salvage company that covers the high-value area of the city and can be summoned to any part of the town on special call.

A specially valued piece of apparatus, also built in our shop, is a lighting truck, which is mounted on a Ford chassis equipped with a G. E. generator and 16 Crouse-Hinds floodlights. There are four 1,500-watt lights, one 2,000-, one 1,000-, six 250-, and four 500-watt portable lights with long extension cords. The panel board was made by Westinghouse Electric Corporation.

In addition to the motor and body shop, we have a ladder shop, and a shop devoted to the maintenance of buildings. All shop work is under the direction of Assistant Chief T. J. Powers and Master Mechanic L. A. Roberts.

Fire prevention is the responsibility of a fire marshal, two chief inspectors, two arson investigators, and 25 inspectors. Last year they made 43,916 inspections, and reported 50,872 hazards. Then 21,853 re-inspections found that 49,725 of the hazards had been corrected—97.7%.

The fire-alarm division consists of a chief fire-alarm dispatcher of District Chief rank and 13 dispatchers of Senior Captain rank. First alarms in 1953 comprised 2,510 by Gamewell box and 4,289 Stills (by telephone). In addition, there were 36 second alarm, 14 third alarm, 3 fourth alarm and 44 special calls, for a grand total of 6,896 alarms. This is a factor of 209 alarms per pumping engine owned. Alarms from outside city limits number 40 building, 15 grass and trash, and 31 miscellaneous. Auxiliary to the Fire Alarm division is a Street Indexing division, engaged in revising the entire running schedule for the City of Houston.

Incendiary Tries Us Out

The foregoing sounds like just what it is—an outline of the material features of the fire department of a big city that jumped 55% in population in the last 10 years. Is the equipment right? Is the department adequate to the task?

When three lumber yards burned on the same Sunday afternon, we were given an opportunity to measure our ability to cope with a big fire. Four alarms were turned in on the first fire, and three alarms on each of the subsequent two fires. Companies were out on all three fires at the same time.

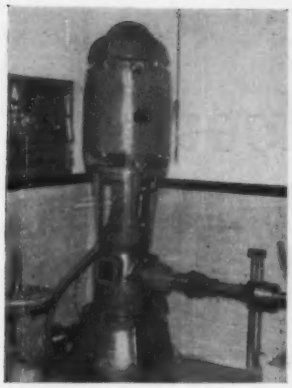
Engines responding but not needed for pumping were sent to various stations and manned by off-duty men, so that the city remained protected. No outside help was asked or received. An incendiary set these and numerous other fires. He was apprehended and committed to an institution.

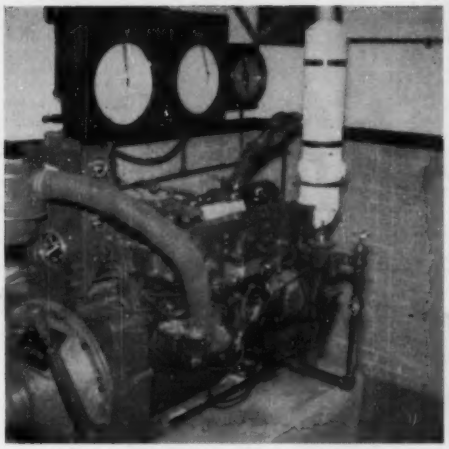
Texas cities pay fire insurance premiums in accordance with the ratio of fire losses to insurance premiums. For the five years 1949-1953, Houston's losses totaled $13,202,439 compared with insurance premiums aggregating $30,273,433. Thus, the loss ratio was 0.4361 or 43.61%. This carries a credit of 10% which, with estimated premiums of $6,500,000 will save fire insurance buyers $650,000 in 1954.

Following is the state basis for computing fire insurance credits and charges:

Loss Percentages

Credits		Charges	
Losses under 24%	25%	Losses from 52% to 58%	Neutral
Losses from 24% to 31%	20%	Losses from 58% to 65%	5%
Losses from 31% to 38%	15%	Losses from 65% to 75%	10%
Losses from 38% to 45%	10%	Losses over 75%	15%
Losses from 45% to 52%	5%		





This pumphouse (right) is the only visible evidence of Plymouth's "nature-built" filtration system. The little boxlike platform on the side holds a 500-gallon drum of gasoline for the auxiliary engine. The pump (left) with its right-angle gear connection can deliver 350 gpm by using either electric or gasoline power. The standby engine (center) has its own battery and battery charger. The entire station is automatically controlled. Operations are recorded on panels in background.

Nature Built the Filter Plant

Plymouth, N. H., capitalizes on a favorable ground-water location to obtain good water in abundant volume at a thrifty cost

By ALFRED J. LEGASSE, *Superintendent of Water, Plymouth, N. H.*

THERE is no doubt about it—Plymouth's water-filtration system was a long time in the building. Mother Nature operates on her own schedule and is not concerned with the passage of years as are the rest of us.

Nevertheless, we are all grateful that she completed the system in time for us to make use of it and that we had the benefit of alert engineering talent to mark the system's location. These natural treatment facilities have simplified supplying of water to our central New Hampshire city of 3,000 permanent residents, a population which is doubled by summer visitors.

Our filter plant doesn't conform to the conventional type of plant serving other cities. Actually, all it consists of is a pumping station over a gravel-packed well on 55 acres of land. This site is the point where the Pemigewasset River comes down from the north to join Bakers River flowing from the west. We get the benefit of river water passing through a giant slow sand filter placed there by nature's thoughtful hand.

Flood Protection

The operating floor of this pumping station is about 10 feet above the ground level. Since the rivers flood occasionally, the roof is another 10 feet higher, an elevation beyond the high-water point. The last high flood, which broke all previous records, reached the third step of the approach.

The well is equipped with a Cook pump and right-angle drive that enables us to use either electric power or power from our Continental gasoline engine when the high line is broken. The pump will deliver 350 gpm when powered either by the electric or gasoline motor. It starts and stops automatically by the use of a G-E day-and-night clock.

A Brown recording flow meter, with electronic integration, records and indicates the rate of flow and total gallons delivered to the reservoirs. In addition, the chart of the flow meter provides a record of "on" and "off" pumping times. On the other end of the line, another Brown meter, a recording pressure gauge, provides a daily record of line pressure changes.

Storage

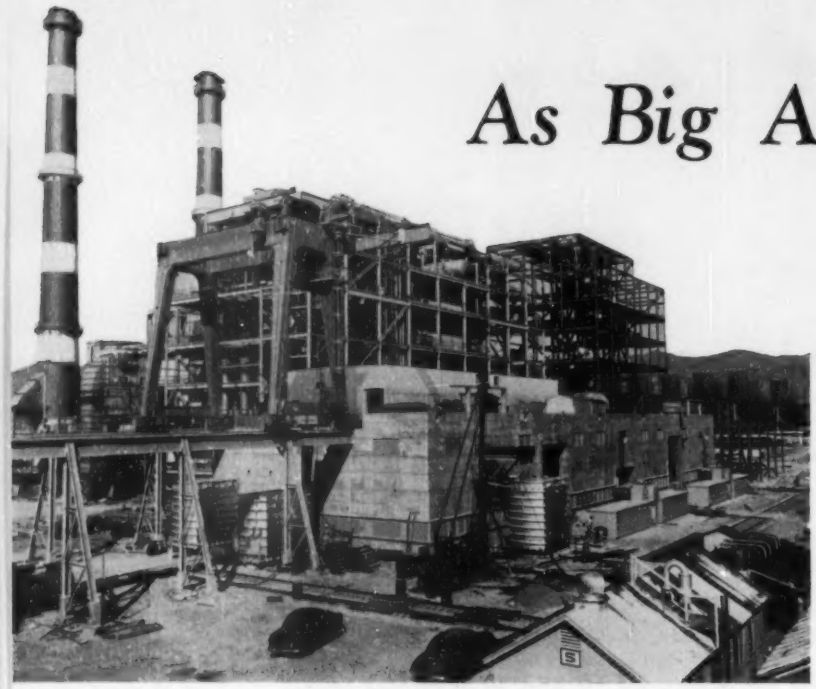
Most of the water goes to our main reservoir which holds about 2,500,000 gallons, a sufficient supply for our regular needs. We also have a standby reservoir which holds 1,500,000 gallons that we can use in case of a bad break or a large fire.

From here, we deliver the water to a new prestressed-concrete standpipe located on a hill to give us the equivalent of elevated storage. This tank is 26 feet tall, 50 feet in diameter, and holds 300,000 gallons. An automatically controlled Pennsylvania pump, able to deliver 300 gpm, keeps the standpipe full in accordance with standpipe level by means of a float-actuated switch, or in accordance with main line pressure by the Brown pressure gauge. A second pump, also a Pennsylvania, but with a 700-gpm capacity and powered by a Continental gasoline engine, is used as an auxiliary. Both gasoline engines are started manually, and have their own batteries and battery changes.

The line connecting the main pumping station with its turbine pump and the booster station passes under the river. To make this crossing, we use two separate lines for safety. Both are composed of cement-lined, mechanical-joint, cast-iron pipe made by the Warren Foundry and Pipe Corporation.

The work was designed and its construction supervised by Whitman and Howard, Inc., of Boston, Mass. This firm is currently working on another 2-mile main line designed to serve about 40 more users.

As Big As Hoover Dam



Los Angeles' big new plant under construction.

Los Angeles' new Valley Steam Plant will produce as much electric power as is allotted by Hoover Dam

By SAMUEL B. MORRIS, *General Manager and Chief Engineer*
Los Angeles Department of Water and Power, Los Angeles, Calif.

TWENTY-FIVE years ago, few of us in Los Angeles had the foresight to believe that the day would come when we would no longer be dependent upon the mighty Hoover Dam for our main supply of power. But today, Los Angeles is putting the finishing touches on a steam-powered, electric generating plant capable of providing as much power as is now made available to the city by the Dam.

The city is building the plant on a 150-acre site in the San Fernando Valley. Its utimate generating capacity will be 512,000 kw, an addition of about 45% to the city's total power-generating capacity.

The plant will consist of four steam-electric generating units: two of 100,000 kw each, and two with a capacity of 156,250 kw each. The two 100,000-kw units are scheduled to go into service this year. The other two will follow as quickly as construction permits.

Semi-Outdoor Installation

The Valley Steam Plant, in accordance with modern trends for mild climates, is of the semi-outdoor type. It provides housing for operating personnel, for equipment that cannot be located outdoors for practical purposes, and for equipment which could easily be enclosed by minor additions to necessary structures.

Major equipment, including boilers, turbines, generators, and unit auxiliary power centers, are weatherproofed and located in the open. One of the most dramatic of these units, and one that always attracts the attention of visitors, is a traveling gantry crane that extends the length of the turbine generator deck. The crane is placed on rails set 45 feet apart and is capable of lifting 225 tons.

Each of the four generating units is designed to operate as an independent power plant; each has an individual boiler, transformer, auxiliary power system, and auxiliary equipment. We have found that this arrangement offers the greatest economy, consistent with the required degree of reliability.

The two boilers now being installed are Babcock & Wilcox units; those for the third and fourth units will be furnished by the Riley Stoker Corporation. All will be able to burn fuel oil, or natural gas when available. They also can be converted to the use of coal should future conditions dictate it.

Each boiler for the first two units will be capable of producing 850,000 pounds of steam per hour at a pressure of 1,500 psi and a temperature of 1,000° F. Each of the other two boilers will be capable of producing 1,200,000 pounds of steam per hour at 1,850 psi with initial and reheat temperature of 1,000° F. Operating at full load, the four units will consume about 640,000 barrels of fuel oil per month.

Six oil-storage tanks are being installed to insure a dependable fuel supply, providing a gross storage capacity of 1,031,400 barrels. Space has been reserved for the storage of coal and for the installation of coal-burning and coal-handling equipment in the event that its use as a fuel should be required.

The steam generated will provide power for driving the generators at 3,600 rpm. Each generator will deliver

power directly to a three-phase transformer. This will step up the voltage from 13,800 volts for the first two units, and from 18,000 volts for the second two, to 138,000 volts for transmission to the city's power-receiving stations. The turbine generators for the first two units are Westinghouse; the other two units will be General Electric.

With all four generating units in operation, the plant will require about 284,000 gpm of condenser circulating water for condensing the exhaust steam from the turbines. The plant will utilize eight cooling towers, all supplied by the Fluor Corporation.

Water for the plant will be supplied by a 48-inch pipeline connected to the Los Angeles–Owens River aqueduct and supplemented with wells on or near the plant site.

A Permutit automatic demineralizing system will treat the water used in the boilers, giving it a purity comparable to distilled water. Internal treatment of boiler water will be accomplished by automatic equipment controlled by the boiler feed-water flow.

A Milton Roy chemical-feed system treats the condenser water and bearing-cooling water to control algae, corrosion, and scale formation.

The plant will use the most modern equipment available to control stack discharge, keeping it as free as possible from smoke, dust, and fly ash. Television apparatus will be used to observe the combustion process in the boiler furnaces, and bolometer-type gas-density detectors will be used at the stacks for observation of the density of the stack gas. The stacks are 250 feet high.

Control Rooms

The plant is being provided with two control rooms, each located between a pair of steam-generating units. From them, operators will direct plant operations by use of remote-control devices and extensive intercommunication facilities. Most of the information relative to equipment operation will be brought to these rooms by pneumatic or electrical impulses originating from transmitters located as close as possible to the actual points of measurement.

Typical of the controls here is the Fireye flame-failure safeguard, a Combustion Control device which senses by infrared radiation of the burner flame, whether or not that burner is operating. Should it be extinguished, a flame-failure alarm will sound and the operator can close the particular burner valve manually.

On this same panel are the television screens that actually view the fire from the rear of the furnace, giving the operator knowledge of the quality of the fire, characteristics of the flame, and flame pattern. Television screens also will provide a continuous view of the gauge glasses that are located on each boiler drum.

Use of Hydrogen

Each generator is cooled by hydrogen gas, rather than air. The hydrogen-cooled machine differs fundamentally from the older, air-cooled unit. The ventilating system is made gastight and is filled with hydrogen which is circulated by fans on the rotor through the machine. Here it picks up heat and then passes through finned-tube heat exchangers where the heat is transferred to cooling water from an external source.

The use of hydrogen for cooling provides a means of increasing output per volume of active material because of high thermal conductivity; reduced maintenance expense because of freedom from dirt and moisture; increased insulation life because of absence of oxygen and moisture in the presence of corona; and reduced windage losses. Windage noise is also materially reduced.

The main steam condensers receive the exhaust steam from the turbines and condense it into water to be returned to the boiler. In this process, a vacuum is produced, increasing the pressure range through which the steam is expanded. Lummus condensers are being used throughout the plant.

The 10-stage vertical condensate pumps discharge 800 gpm of water at a temperature of about 100° F., at a total head of 575 feet. The pumps are driven by 150-hp electric motors. The pumps take water from the condenser hot well, which is under pressures as low as 1 psi absolute (atmospheric pressure is 14.7 psi absolute). The discharge of the pumps is automatically controlled by a throttling valve.

The second pump is started automatically as required by the flow of steam from the boiler. For the first two units, Byron Jackson condensate pumps are being furnished. Those for the second pair of units will be supplied by the Johnston Pump Company.

Each of the first two units has a 22,000-gallon make-up and draw-off tank. These act as surge tanks to receive the excess condensate produced by load changes. The draw-off line has two level-controlled valves which are operated from the condensate level in the condenser hot well. Tank interiors are coated with bitumastic enamel to prevent corrosion which

In line with its policy to use the most modern equipment available, the plant uses a plastic-type pipe for condensate make-up lines.

would allow iron oxide to be fed into the boiler feedwater system.

The make-up and draw-off tanks currently being built are being supplied by the American Pipe and Steel Company. Tanks for the two future units will be supplied by National Tank and Manufacturing Co.

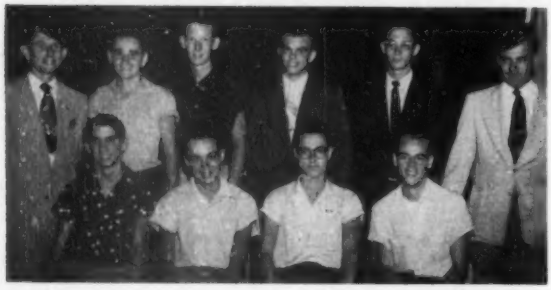
The circulating water make-up lines are polyester resin, Fiberglas-reinforced plastic pipe made by the Reflin Company. This is a smooth, seamless pipe that appears able to discourage mineral and biological deposits and to resist corrosion. The same pipe is being used in the chemical drain lines of the water-treatment facilities used at the plant.

The Permutit water-treatment facilities are of the demineralizing type, able to produce 100 gpm of water equal in purity to distilled water. Two filters, eight ion exchangers, and a vacuum deaerator provide the necessary treatment. The plant produces filtered, demineralized water of low oxygen, silica, and zero carbon dioxide content. An important feature of the system is the use of the vacuum deaerator to remove carbon dioxide and oxygen from the water.

The entire engineering design of the Valley Steam Plant has been performed by department engineers; and construction is being accomplished by department forces and contractors.

The design and construction of the plant is under the general direction of department engineers headed by the author as general manager; William S. Peterson, assistant general manager; Ivan L. Bateman, chief electrical engineer; James D. Laughlin, and Bradley Cozzens, assistant chief electrical engineers.

"Boys State" Gets Municipal Sponsorship



Eight Miami youths who attended Boys State in Tallahassee recently are pictured flanked by two American Legion members.

The interest of municipal employee organizations and other groups in promoting good citizenship was demonstrated recently in Miami when eight local youths were sent to Boys State at Tallahassee, under the joint sponsorship of the American Legion and City of Miami employee organizations.

Boys State is a national program of the American Legion, and in Florida has been carried on for 10 years. This year there were 377 delegates, who set up models of city, county, and state governments. Secretary of State C. M. Gay and other officials spoke to the delegates on government.

The collaboration between the city employee groups and the legion was brought about through the efforts of Leonard Kendrick and Joe A. Yates III, both City of Miami employees and both long-time leaders of the Lindley de Garmo Legion Post of Coconut Grove. Each post is allowed to send a specified number of boys to Boys State, depending on the size of its membership.

"We were allowed two at our post," Mr. Kendrick explained. "But in checking around we found that there were a number of vacancies, as some posts in smaller communities were unable to undertake sponsorship." He and Mr. Yates then began a canvass of city employee organizations and civic clubs, asking each to contribute the $60 necessary to cover each boy's transportation, meals, lodging expenses, and a little spending money.

City of Miami groups sponsoring a boy each were the Police Benevolent Association, Firemen's Benevolent Association, Water Works Local 654, General Employees Association, and the Supervisors Council.

Other sponsors were the Coconut Grove Exchange Club, the Kiwanis Club and, of course, the de Garmo Legion Post.

Planners Puzzled Over Jets

COWS giving less milk? Hens laying fewer eggs? Pigs not gaining enough weight? They have been frightened by the roar of jet planes, many farmers claim. The jet, pride of the aeronautical engineer, has become a problem to city planners, according to three reports issued by the American Society of Planning Officials, entitled, "Impact of Turbine-Powered Aircraft Upon Land Near Airports."

Loudest Single Source of Man-Made Noise

The report admits that jets are the loudest single source of man-made noise; that their take-off is shallower, and that they gain altitude more slowly than other planes, bringing a larger ground area under the flight paths. High landing speeds require runway lengths that may extend 10,000 feet and more. The aircraft industry, however, is trying to develop methods of braking the high speeds that are now needed for landing jet planes.

Only certain industries, such as those producing noise also on a high noise level, can accept jet airports as good neighbors—provided the jets do not produce smoke, fumes, or radio interference.

Trees, as a sound barrier, the report concludes, are virtually useless. Although tests in Great Britain indicate that a 100-foot strip of 15-foot-high, thick woodland reduced the noise about five phons—a measurement of noise similar to the decibel, results were labeled inconclusive.

Text of a Well-Edited Municipal Employees' Manual

IN 1906 University City was incorporated with an area of 2.42 square miles and about 2,000 inhabitants. Today, University City, with an area of 5.9 square miles, has over 50,000 persons residing within its boundaries.

Residents of this thriving residential community have always expected and received a high level of service from their municipal government. The continuation of this record of service, of which we all may be justly proud, depends upon each one of us doing our job efficiently and effectively.

Section I
THE GOVERNMENT OF UNIVERSITY CITY

In 1947, the voters of University City adopted a home-rule charter establishing the council-manager form of city government. The charter provides for a seven-man council elected for four-year overlapping terms.

The council, acting as the elected representatives of the people, passes all ordinances and determines the general goals of the city. To carry out its decisions, the council appoints a city manager.

As the chief administrative officer of the city, the city manager is directly responsible to the council for the day-to-day activities of the city government. To facilitate the conduct of the many varied city activities, related work is assigned to a certain department. City employees are assigned to one of these departments according to their qualifications and experience.

Section II
INFORMATION FOR APPLICANTS

Examinations

In so far as possible, applicants for jobs with University City are given competitive written and oral examinations. These examinations, administered by the personnel department, test the applicant's general intelligence and his suitability for a position with the city. A medical examination may also be required. The names of the three persons making the highest grade on the examination are placed on an "eligible list." This list is sent to the appropriate department head, who selects one of the three to fill the vacant position. When more than one position is to be filled, additional names are placed on the eligible list.

Residence

City employees are not required to be residents of University City. However, after the eligible list is established, residents are given preference in the filling of a vacancy. All employees, however, are urged to live in University City whenever possible.

Probationary Period

After you are employed by the city, you are placed on probation for a six-months' period. The purpose of this probationary period is to allow your supervisor to evaluate your performance on the job. Also, it enables you to become accustomed to your new job, and your fellow employees.

At the end of the probationary period your supervisor prepares a report on your work. If your job performance meets the required work standards, you become a permanent employee of the city.

During the probationary period, you are not entitled to sick leave or vacation benefits, nor are you entitled to take an appeal to the civil service board. However, if you feel that you have been treated unfairly, you may appeal to the personnel department.

Section III—PROMOTIONS

The policy of the city is to give primary consideration to present employees when any vacancy occurs. This means that you have an opportunity to advance to positions of higher pay and greater responsibility.

Promotions are made on the basis of competitive examinations and your supervisor's evaluation of your performance on the job. Length of service, application to your job, and ability to get along with fellow employees are all considered when promotions are made. In some departments, a certain period of service is required before you become eligible to take a promotional examination.

Section IV—HOURS OF WORK

City Hall employees work five days weekly, from 8:30 to 5:00 with a 45-minute lunch hour, and alternate Saturday mornings. Other departmental working schedules are set by the department heads with the approval of the city manager. Certain special jobs require different schedules. Police officers normally work a 48-hour week. Firemen work 24 hours on and 24 hours off.

Overtime

Occasionally, your supervisor may ask you to work overtime. Normally, you will be allowed time off, or compensatory time, equal to the amount of overtime you work. In special cases, you will receive extra pay for overtime work. To do so, payment must be approved by the city manager before the overtime is worked.

No allowance of any kind can be made for overtime not authorized by your supervisor.

Incomplete Pay Period

When you do not work your regularly scheduled work period, a percentage of your regular pay will be deducted from your check, unless your absence is covered by the "absent with pay" leave provision. The amount deducted will correspond to the actual time you missed.

Section V—PAY

Pay day for all city employees is the fifteenth and the last day of every month. Should either of these days fall on a weekend or holiday, you will be paid on the preceding day.

How Determined

The position you hold, as well as all other jobs with the city, has been classified and evaluated according to the kind of work performed and the amount of responsibility. The purpose of these evaluations is to insure an equitable pay rate for all city employees. The amount of pay for each job class is determined by a salary ordinance adopted annually by the council.

The maximum and minimum salaries for each classification are determined by the council. Normally employees are appointed at the minimum rate, with increases to the maximum rate given in four steps. Increases in salary are given to employees only on the basis of merit, and according to the recommendations of your supervisor.

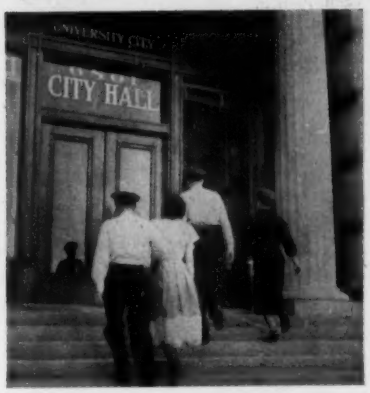
Cost-of-Living Provisions

Salaries are adjusted according to fluctuations in the cost-of-living index. In this manner you are protected against sudden increases in living costs. Salaries are adjusted to the index twice yearly, in July and January.

Pay Roll Deductions

The city is required by law to make two deductions from your pay check. The withholding of your income tax accounts

WORKING TOGETHER



EMPLOYEES' MANUAL

CITY OF UNIVERSITY CITY, MISSOURI

"This handbook," writes City Manager Elder Gunter, of University City, Mo., has been prepared under the authorization of our Civil Service Board and has been distributed to all city employees. It will, of course, also be used for distribution to new employees as they are hired."

for the greatest part of these deductions. The other deduction is a small amount for your Old Age Benefits (Social Security). Employees of the police and fire departments have a separate pension fund, for which six dollars is deducted each month.

You may also authorize deductions for the Blue Cross and Blue Shield hospital and medical insurance plan if you desire.

Policemen and firemen pay two dollars a month for a group life insurance policy.

Section VI—HOLIDAYS AND LEAVES

Holidays

The following days have been designated as paid holidays for regular employees:

New Year's Day
George Washington's Birthday
Memorial Day
Independence Day
Armistice Day
Labor Day
Thanksgiving
Christmas

Whenever one of the holidays falls on a Sunday, the following Monday is observed as a holiday.

If you are a fireman or a police officer, you are expected to work on a holiday if it is your scheduled day of work.

Annual Leave

If you are a permanent, full-time employee, you receive one day of paid annual leave or vacation time for each month you work. Although you earn vacation time from the day you start to work, you may not take a paid vacation until you have completed the probationary period. Vacation time is accumulative up to 18 days.

Sundays and paid holidays falling in your vacation period do not count as a part of your vacation time unless they fall within your regular work schedule. Saturdays during your vacation are counted as full days.

Requests for vacation are submitted by the employee and must be approved by your supervisor or department head. Occasionally he may find it impossible to reassign your work among other employees, and your vacation will have to be rearranged.

Sick Leave

All permanent, full-time employees accumulate one day of paid sick leave for each month worked. You accumulate sick leave from the day you start to work; however, you must complete the probationary period before you may take sick leave. To protect you and your family in case of a serious illness, you may accumulate up to 60 days of sick leave.

All requests for sick leave must be approved by the personnel director. When you are sick for more than two days, the personnel director may require a statement from your physician.

In case you are ill and unable to report for work, let your supervisor know about it immediately, so he can arrange to have your work done by other employees on the job.

Other Leaves with Pay

"Emergency Leave" is given to employees in case of a death in the immediate family. You may not take more than three days' emergency leave in any one year.

Employees are also granted leaves for jury duty, or other required attendances before a court.

You may be granted leave to attend meetings relating to your duties as a city employee, or to participate in training activities. All leaves of this type must have the approval of your department head and the city manager.

Leave of Absence Without Pay

If you are called into the military service during a national emergency, you will be granted a leave of absence without pay. This leave expires 90 days after your discharge from military service. Within that time, you must inform the personnel director of your willingness to return to city employment, and show proof of honorable discharge. You may also, at your request, be granted a leave of absence without pay, not to exceed one year. Leaves of this kind are granted for travel or study that will increase your usefulness to the city. At the end of such granted leave, you will be reinstated in the position you held when the leave was granted.

Section VII—LEAVING THE SERVICE

Layoffs

In periods when the work load is light, or in case of a shortage of funds, it may be necessary to lay off some employees. Seniority and performance on the job determine the order in which employees shall be laid off. If you are laid off, your name will be placed on a re-employment list, and you will be given preference when new appointments are made.

Resignations

To resign in good standing you must give your supervisor or department head at least 14 days' notice. The resignation must be in writing and contain your reasons for leaving the employment of the city.

Section VIII
DISCIPLINARY ACTION

As a city employee, you may be formally disciplined by three methods, demotion, suspension, or discharge. In case you are so disciplined, you have the right to appeal to the civil service board. The appeal procedure is described later in this booklet.

No employee may be disciplined without just cause. Violation of certain rules will be considered cause for disciplinary action. These rules may vary from department to department. Your supervisor or department head will fully inform you of the rules and regulations relating to your job.

Demotions

For some violation of the rules, a department head may reduce the salary of an employee within a job class, or he may demote the employee to a lower classification. A written statement of the reasons for the demotion must be sent to the employee and the personnel director at least five days before the effective date of the action.

Suspensions

Violations of a more serious nature may necessitate a suspension of an employee. Employees may be suspended, without pay, up to 30 days during the year. The personnel director must receive a full report of any suspension, and the employee involved shall receive a copy if he so requests.

Discharges

Repeated violation of departmental rules, or gross misconduct may necessitate the discharge of an employee. Within five days after the discharge, the department head must give the employee a written statement of his reasons for the action. A copy of the statement is also sent to the personnel director.

In all cases of disciplinary action, the employee who is demoted, suspended, or discharged, may appeal to the civil service board.

Section IX—CIVIL SERVICE BOARD

The civil service board is composed of three citizens appointed by the council. Some of the purposes of this board are:

1. To provide citizens of University City with maximum production, effort, and service through the proper selection, placement, utilization, and supervision of city personnel.
2. To stimulate your will to work and assist you in the performance of your job.
3. To insure you of fair and equitable treatment, maximum security of employment, and a right to be heard on any problem relating to your work.
4. To maintain a high standard of working conditions and job privileges consistent with economic conditions.

If you feel you have been unfairly treated in any matter covered by civil service regulation, or have been unfairly demoted, suspended, or discharged, you may appeal to the civil service board. If you wish to appeal to the board, you must notify the board, in writing, within 10 days after the effective date of the action. The board will then call a meeting at which time the appealing employee and the supervisor or department head will have the right to be heard publicly and present evidence.

After hearing and considering the evidence, the civil service board may recommend:

1. Confirmation of the action of the supervisor or department head.
2. Reinstatement of the employee.
3. Placing the employee on an appropriate re-employment list.

The civil service board then files a written statement of its findings and recommendation with the city manager. The city manager may then confirm or overrule the action of the board. His decision is final.

Section X—PERSONNEL DEPARTMENT

Training

As an employee of the city, you will have an opportunity to participate in numerous "on-the-job" training programs. These programs are designed to help you do your job better, and to help you qualify for salary increases and for positions of greater responsibility. You are helping yourself when you take part in these programs as they are offered to you.

Outside Training

In some cases the city may pay the cost of night school or correspondence school training for employees. Should you desire to take such training, fill out an application stating the course, school, cost, and a statement telling how this training will help you do your job. This application is turned in to the personnel department and reviewed by three department heads. Reinbursement to one employee for outside training may not exceed $50 in any one fiscal year. Payment over this amount requires the approval of the city council.

Suggestions

Do you have an idea as to how your job could be done better? Or easier? If you do, your supervisor or department head will be glad to hear about it. Many improvements in procedure and in services to citizens have resulted from employees' suggestions.

Employee Security

Some disagreements are not covered by civil service regulations. In these cases, employees may present such disagreements to the personnel director in the following manner:

1. The employee notifies the personnel director, either in writing or in person, of all the pertinent facts of the case.
2. Within five days, the personnel director calls a meeting of the employee, department head, and other persons involved in the disagreement.
3. After obtaining all the facts, the personnel director makes a report of his findings and submits it to the city manager. The decision of the city manager is final.

Many times a disagreement is such that it can be solved without going through the formal procedure. In such cases the personnel director may work out a solution that is satisfactory to all the parties involved.

Section XI—EMPLOYEE BENEFITS

Workmen's Compensation

While working on your job with University City, you are covered by the Workmen's Compensation Law of Missouri. If you are injured on the job, your doctor and hospital bills are paid, and you receive a subsistence allowance during the time you are off the job. If you elect to take sick leave during the absence caused by an accident, you will not receive the subsistence from the Workmen's Compensation Insurance. Instead, the subsistence check will be paid to the city.

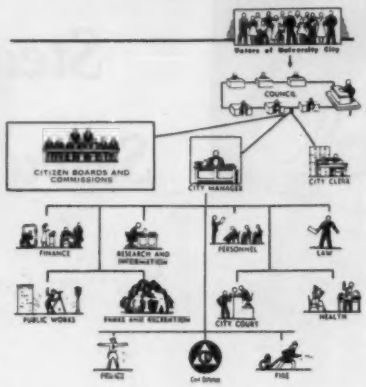
All injuries should be reported immediately to your supervisor. No one can tell when an apparently small injury may have serious after effects.

Blue Cross and Blue Shield

Employees of University City may take advantage of Blue Cross hospitalization and Blue Shield medical insurance. If you decide to take out these insurance policies, the monthly premium will be deducted from your pay check. Additional information regarding the cost f this insurance and the extent of coverage may be obtained at the accounting office.

ORGANIZATION CHART

CITY OF UNIVERSITY CITY



Old Age Benefits (Social Security)

All employees of the city, except members of the police and fire departments, are covered by Federal Old Age and Survivors' insurance. The cost of this insurance is deducted from each pay check, with the city paying an equal amount.

The amount of your benefits at retirement depends upon your salary, your age, and your dependents.

Further information about your benefits under the Social Security Act can be obtained from the St. Louis office of the Social Security Administration.

Pensions for Policemen and Firemen

Employees of the police and fire departments are covered by a separate pension fund. Members of these departments receive $100 a month upon retirement at, or after, the age of 60, and after 20 years of service. In case of death, or total and permanent disability, you and the members of your family will receive benefits from this pension fund.

Should you have a question about your pension benefits as a fireman or police officer, talk to your department head or the personnel office.

Employees' Credit Union

The University City Employees' Credit Union is operated by elected representatives of the employees of University City. The purpose of this organization is to receive the savings of members and to make loans to its members. Loans are made by the treasurer after approval by the credit committee.

Membership in the Credit Union is open to all employees of the city, and their families.

Further information about the benefits of the Credit Union may be obtained from any Credit Union Officer, or in the finance department.

Section XII
SOME RULES YOU SHOULD KNOW

Political Activity

Civil service rules forbid you to make any contribution of time or money to any candidate for any public office or to any political party. As a private citizen you have the right to vote as you choose and to express your opinion on political issues. However, be sure people recognize the opinions you express are your personal beliefs, not those of the City of University City.

Telephone Courtesy

We serve the citizens of our city. Many of our services are done by telephone. When a citizen calls with a complaint or a question, he deserves your prompt and courteous attention. The impression you make over the telephone is the one he will remember, and pass on to his fellow taxpayers.

Whenever you talk on the phone, be friendly and courteous. Give your name and department, and speak distinctly so you can be easily understood. If you cannot answer the question or handle the complaint, transfer him to someone who can, or take his number, find out the answer to the citizen's inquiry and call back later.

If you find it absolutely necessary to make a personal call on a city telephone, keep the time of your call at a minimum. City telephones were installed to speed and ease the transaction of city business. They cannot serve their purpose when tied up with personal phone calls.

City Vehicles

When you are assigned a city-owned vehicle or any equipment for your work, you are responsible for its proper use and maintenance. Any defects that you note should be reported to the central garage so they may be repaired.

Except when on emergency call, all city vehicles must be operated according to the traffic laws of the City of University City.

Should you have an accident while driving a city vehicle, there are certain things you must do:

1. Assist any injured person.
2. Take the names and addresses of the other person or persons involved in the accident.
3. Take the names and addresses of all witnesses present.
4. Notify the police.

At no time should a city vehicle be used for purposes other than the transaction of city business.

Section XIII—CONCLUSION

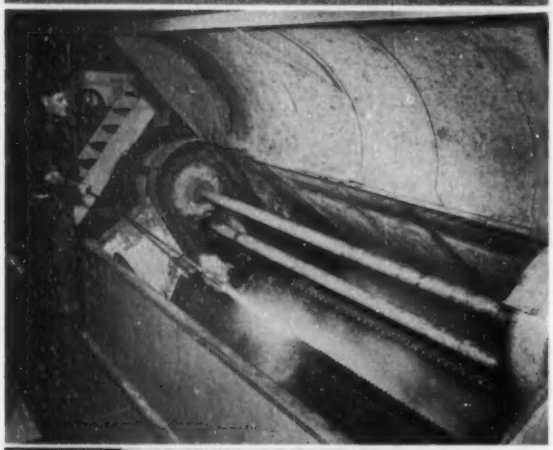
Your privileges, duties, and responsibilities are, of course, much more numerous than those outlined in this booklet.

Should any questions arise about your job, your supervisor, department head, or the personnel office will be happy to answer them.

Remember, as a public employee you are a public servant. Citizens, no matter who they are, must always be treated with courtesy and consideration.

You may be the only contact a citizen has with his municipal government. The impression you make, whether good or bad, will be the one that the citizen will remember. He will also assume your attitude toward him and his problem is the attitude of the entire city government. It is particularly important that a full, courteous explanation be given a citizen when it is necessary to refuse his request, or when the action requested lies outside the jurisdiction of the city.

Single copies of this manual are available to readers of THE AMERICAN CITY at no charge, upon request to Elder Gunter, City Manager of University City, Mo.



(Top) A grease-clogged sewer quickly begins to flow with the help of the steam line.

(Center) Bar screens and racks are steam-cleaned in quick order.

(Bottom) Trucks get back into spick-and-span shape with the help of the steam cleaner.

(Right) The truck-loading pit was a difficult place to keep clean, but now one man can do the work easily.

Steam-Cleaned Sewage Treatment

By ARTHUR H. NILES
Commissioner of Sewage Disposal
Toledo, Ohio

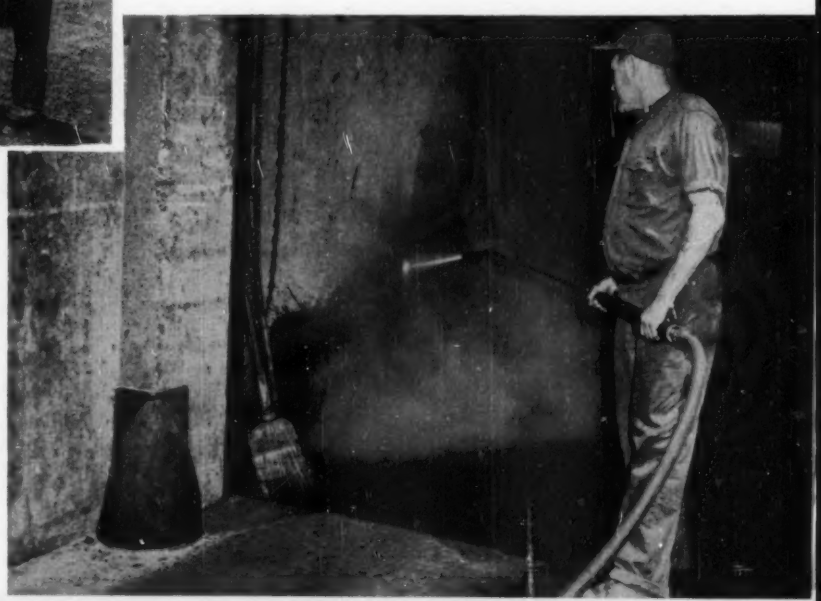
ACHIEVING cleanliness in a sewage-treatment plant is a never-ending job. Again and again, the rancid grease and filth has to be removed from floors, walls, and working parts of the plant if it is to be kept from becoming an odorous nuisance. For the past year, the job of cleaning the Toledo plant has been a lot easier and more efficient since our operators have had the advantage of steam-cleaning equipment.

The Machine and Its Uses

The machine we are using is a Champion Hypressure Jenny steam cleaner, made by Homestead Valve Manufacturing Company, of Coraopolis, Pa. Our plant superintendent, Elmer L. Pollex, uses it to clean suction wells, cage screens, screen-room floors, and pneumatic ejector hoppers in the pumping station.

In the plant proper, he uses it to clean the bar screens and bar-screen chambers as well as the grit-chamber floors, grease and scum ejectors, grit-storage tanks, the truck-loading area under the tanks, and even the trucks themselves.

In addition to its regular cleaning chores, the operators use the Jenny to open grease-choked sewers, prepare effluent tunnel grates for repainting, and for many other odd jobs that come under the heading of housecleaning. The machine is portable, can produce 180 gallons of boiling-hot spray per hour, and serves as a cleaning tool that would be hard to replace.



The two Burroughs tax-accounting machines that are used in the city's tax office compute the tax, print the bill, ledger card and control journal in one operation.

West Palm Beach Reports 100% Tax Collection

By MRS. IRMA S. GRIDER
City Tax Collector
West Palm Beach, Fla.

EIGHTEEN years ago, West Palm Beach, Fla., had the questionable honor of being the first municipality ever to be declared bankrupt by a court and, on June 14 this year, claimed another first—a national tax-collection record showing its current tax roll 100%.

Tax records show real-estate collections of $1,510,836; personal property collections of $334,070; and railroad taxes of $25,221.

The formula which West Palm Beach applies to its tax collections is a system developed over a period of years by combined legislative and mechanical application of good business methods.

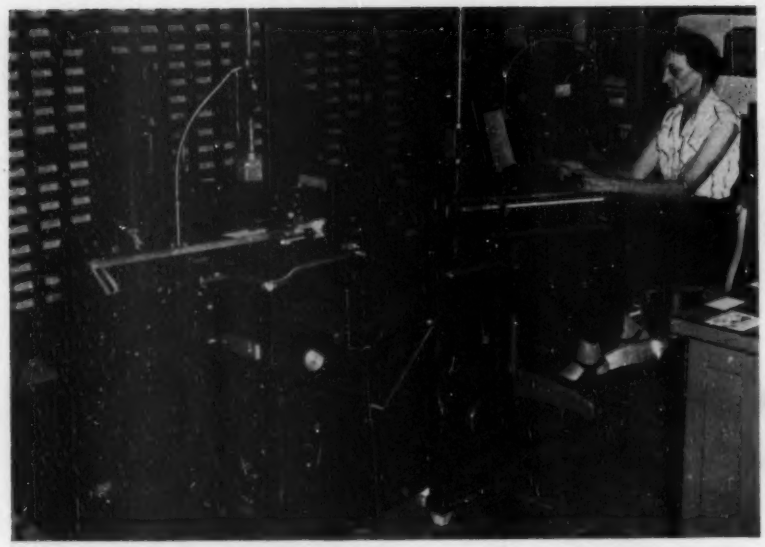
Modernization and streamlining of tax-assessing and collecting departments in recent years through the installation of modern business machines have saved countless hours of employee time. Even more important, postings are balanced and verified at the end of each day to a cash control provided by the use of a Burroughs receipting and validating machine.

LeFebure Filing Trays Used

The posting clerk arranges these validated receipts by subdivisions, blocks, and lots in accordance with the arrangement of the ledger cards that are filed in adjustable level LeFebure Corporation filing trays. These trays, that each contain one or more of the subdivisions, are kept in the vicinity of the posting machines for convenience of operation. The result is that the customers — the city's taxpayers—get prompt and accurate service at all times.

The system here starts in the assessor's department where each parcel of real estate in the city is described on an Addressograph plate. The plates are kept current at all times and are filed by subdivisions. Clerks in the assessor's office take the tax roll from these plates and need only to apply the current millage and make the necessary extensions and totals to complete the roll.

This procedure saves weeks of clerical work and permits the assessor's staff to devote most of its time in physically checking property so



The system starts with Addressograph plates carrying property owner's name, address, and property valuation. The Addressograph machine is at left; a Graphotype machine, which West Palm Beach uses for embossing plates is shown in use at the right.

that accurate assessments are continuously current.

When any changes are made, they are immediately relayed to the Addressograph operator who, in turn, keeps her name plates current and up to date.

Two Billing Machines

When the tax roll has been approved by the city commission, it is turned over to the tax collector who, meantime, has current bills—some 30,000 of them — Addressographed and ready for the billing operation.

For this operation, the city uses two Burroughs M-1 Series tax-accounting machines which compute the tax, print the control journal and ledger cards, and make up the tax bill in triplicate — all in one operation. The special tax forms used for this billing provide the customer's tax bill, the customer's receipt form and a tax office record.

Bills are mailed in window envelopes processed through a Pitney-Bowes postage machine which seals and stamps the letters.

The city's personal property taxes are divided and billed with a resident's real estate tax or with his occupational license tax. Special legislation makes it possible to collect both types of tax simultaneously.

When the property owner arrives to pay his tax, he is met by a clerk who first verifies the bill and computes allowable discounts. The taxpayer then moves to the cashier who accepts the payment and runs the tax bill through the validating machine which stamps the amount paid and the date on all copies. Payments which are made by mail are processed through the same channels—usually on the day received, and no later than the day following. Receipts go back to the taxpayer by return mail.

The procedure described here has saved this city countless hours in personnel time, and in the tax office takes one less person than under the old system when there were 10,000 fewer tax bills to handle. It has also stepped up the entire operation which is now done in three weeks as compared to the three or four months under the old system.

Special legislation worked out and steered to passage by the City Commission, has made it possible to obtain 100% collections. This legislation has put "teeth" in the city's collection laws and makes it possible to require the payment of personal property tax with real estate taxes or with occupational licenses and allows the city to issue warrants against personal property and to sell tax certificates on delinquent real estate taxes. Other legislation makes it possible for the city to foreclose on certificates held by the municipality for two years or more.

Financial Record

City officials here point proudly to the West Palm Beach financial record which has ranged from bankruptcy in the 30's to the present time when the city's bonded debt stands at $8,500,000. During the last five years $1,500,000 has been lopped off the total indebtedness.

The assessed valuation of property here today, on a conservative basis, is listed at more than $100,000,000—a far cry from the days many city employees remember when, during the depression, none of the residents were paying a penny's worth of taxes and the bonded debt was more than the assessed valuation of all city property.

Municipal Scrip

Those were the days when employees were paid with municipal scrip which was accepted for food and clothing by a few merchants in the city who had supreme faith in the municipality and a gambling instinct. The merchants held the scrip until the city bought it back.

This year, the city h s bought up $300,000 worth of its bonds and in August will have a bond call that will bring total debt reduction this year to the $550,000 mark.

The prosperity has the City Commission considering such projects as a complete sewage disposal system; purchase of the city's privately owned water company; a huge program of westward expansion designed to open up new areas for residential development; new swimming pools; extensions of parks and playgrounds; additions and improvements to city hall and continued expansion of the city's street and highway system.

Said Mayor E. V. Faircloth, "today we are buying our red ink in very small bottles."

Higher Pay for Long-Term Employees

RIVER ROUGE, MICH., and Houston, Texas, have adopted pay policies whereby the longer an employee works for the city, the more he gets. As reported by the Civil Service Assembly of Chicago all employees in River Rouge except elected officials will receive an extra $20 a year for each year of service to the city. A ceiling of $400 of additional annual pay has been established.

In Houston, the city council has voted to pay city workers—except firemen and policemen—$10 a month extra for each five years of service. A ceiling of $50 a month of additional pay has been set in Houston. Firemen and policemen were excepted from the Houston plan because they already benefit from a similar pay plan.

How a Small City Benefits From Planning

Members of the Planning Commission of the City of Cleveland and White County, Ga., are grouped around a model of a redesign of the city square of Cleveland submitted by a Georgia Tech student.

By L. R. COOPER, *Chairman*
The Planning Commission
Cleveland and White County, Ga.

CLEVELAND, the county seat of White County, is located in a beautiful valley of the Blue Ridge mountains of northeast Georgia. The city had a 1950 population of less than 600 persons and a low average per capita income. The story of the accomplishments of this small community has at least fourfold significance.

Elderly Citizens Provide Community Leadership

It demonstrates, in the first place, that effective and enterprising community leadership may come from elderly citizens. This has special significance at a time when our population is aging.

White County, with Cleveland as its county seat, was carved out of the original and larger county of Habersham by an act of the Georgia Legislature on December 22, 1857. The legislation to accomplish this objective was introduced by William B. Shelton, who was then an old man in the closing days of his final term in the state legislature. In the afternoon of that December 22nd his proposed legislation was defeated, primarily through the efforts of two younger legislators, a Mr. Cleveland and a Mr. White.

Defeated in this final undertaking that was close to his heart, Mr. Shelton walked from the legislative hall with tears in his eyes. Mr. Cleveland and Mr. White stopped him, apologized for the injustice they had committed, and called the bill back for reconsideration at the night session. In gratitude to them, Mr. Shelton amended his bill to name the city "Cleveland" and the county "White."

In its early years, Cleveland showed much promise. It had a bank, a railroad, two prospering resort hotels, and excellent shops and stores. But the community became a victim of changing times.

By 1944 the bank had failed, the two resort hotels had burned down and had not been replaced, and the railroad had discontinued its services and removed its tracks. The town had grown shabby and unattractive. Once a month the Mayor passed the hat to obtain enough money to pay the city's electricity bill.

Once again, the required community leadership was provided by an elderly citizen. This time it was Henry D. Wiley, aged 85, who in the spring of 1945 brought the citizens together and inspired them to improve their community.

Outstanding Public Improvements

What happened under Mr. Wiley's leadership makes the second significant demonstration — namely, that an enterprising and determined community can literally pull itself up economically by its bootstraps. With no visible financial resources, the city built a public water-supply and sewerage system, paved the town square, built sidewalks, and installed a much-needed street-lighting system.

These accomplishments were so outstanding that Cleveland was awarded first place in the 1948 Champion Home Town Contest sponsored by the Georgia Power Company. In 1953, Cleveland won first place again in this same contest—the only city in the state that has twice won a first-place award.

The developments that took place between 1948 and 1954 continue the demonstration of economic achievement and add two other demonstrations of significance.

Democracy in Action

The first of these is a demonstration of democracy in action. In 1952, a national zipper manufacturer was seeking a location for a new plant in north Georgia. The choices had been narrowed to two cities.

In the one city, the political leaders assured the manufacturer that they wanted the plant and would cooperate in making its operation there a success. In the other city—Cleveland—the political leaders suggested that they be permitted to bring the citizens together so that they might meet with the plant representatives, learn about the plant, reach their own conclusions, and speak for themselves. This was done.

The solid evidence of widespread citizen interest and support disclosed at this meeting and the democratic methods of decision-making employed in that community were im-

portant considerations in the decision to locate the zipper plant in Cleveland.

What happened next demonstrates that no city is too small to plan for the future development or to benefit from that planning.

At the time the decision was made to locate the zipper plant in Cleveland, the citizens realized that the new industry would attract many new people and would bring problems with which the city was not prepared to cope. The citizens called on the Georgia Power Company for advice on how to meet these problems.

The Power Company suggested that the community needed to plan for the changes that were coming and recommended that help be sought from the city planning and architectural students of Georgia Institute of Technology. This was done. Arrangements were made for the students to be given the planning of Cleveland as class problems. No charges were made for the work of the students, but the city paid their travel and subsistence expenses.

Aid from Georgia Tech Students

The first recommendation of the Graduate City Planning students was that the city and county seek a special state enabling act that would authorize the establishment of a joint city-county planning commission and would grant to both the city and the county the power to zone, to control land subdivision development, and to protect the bed of mapped streets. The students prepared the suggested enabling legislation; it was promptly enacted by the state legislature, and the city and county established a joint Planning Commission.

Working closely with the newly established planning commission, the Graduate City Planning students assembled basic information about the city and county, made a survey of existing land uses and a proposed land-use plan for the city and the surrounding urbanized area.

Subsequently, the students prepared a suggested zoning ordinance for this same area. The ordinance has been reviewed by The Planning Commission, and was adopted by the Cleveland City Council on August 3, 1954.

The City Square presented a special problem. It contains, in the center, a brick Georgian Colonial courthouse that is in need of extensive rehabilitation and is limited in size for its required functions. The townspeople were divided on the question of whether to preserve the courthouse (either as a courthouse or for some other function) or to remove it and build a new, modern courthouse at another location.

A major north-south state highway passes through the square and a lesser east-west highway crosses its southern edge. The square is badly congested and presents serious traffic hazards as a result of the highway traffic movements and of large numbers of parked cars. For the most part the square is now bordered by unattractive wooden frame structures or low masonry buildings.

At this point in the city planning studies, a group of architectural students were brought in. They organized themselves into five teams to prepare alternative preliminary plans and models for the redevelopment of the square—some retaining the existing courthouse and others removing it, some retaining the highways in their present location, others wholly or partially bypassing the square. The property owners on the square had agreed to defer new construction until the preliminary plans were completed and the community had decided which one it liked best. They agreed that they would thereafter construct any new buildings on the square in conformity with the accepted plan and, as rapidly as possible, bring the buildings that are retained into conformity with the general scheme through reconstruction of the building fronts and other devices. The services of professional architects would, of course, be required for this work.

When the planning studies and the preliminary architectural plans and models were completed, the city, the county, and the Georgia Power Company joined in the sponsorship of a "City Planning Picnic" for the presentation of the work of the students. Every resident of the city and county was invited to bring a picnic dinner adequate for his own family and several other persons.

Distinguished visitors from elsewhere in the state and representatives of the press were invited. More than 800 persons attended the picnic and the following session in the school auditorium at which the students of Georgia Institute of Technology presented their findings and recommendations to the community.

The citizens of Cleveland, on that occasion, expressed their intent to carry out the recommendations of the studies in the years ahead and to make Cleveland and White County an ever better place in which to live.

As a next step, the plans and models for the redesign of the Courthouse Square were placed on exhibition in specially prepared cases in the courthouse. Ballots and a ballot box were placed nearby. Citizens were invited to study the plans and models and to vote for the one they liked best. The winning design was one that retained the courthouse.

Since the completion of the studies and their presentation, a second new industry — a woolen mill — has selected Cleveland as its location. The prosperity that has come to the town, as a result of these new industries and the community foresight that made their location in Cleveland possible, is evidenced in part by the million dollars now on deposit in the local bank but, even more importantly to the people, by the increasing numbers of their sons and daughters who are finding employment opportunities and pleasant living conditions in Cleveland and White County and are making their permanent home here.

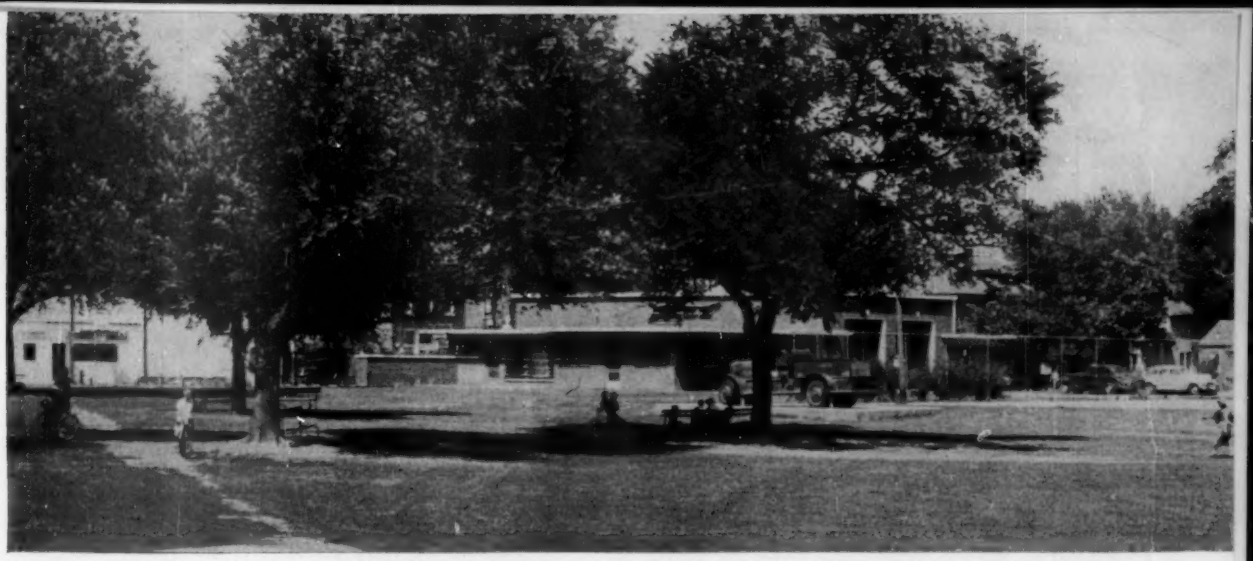
Municipal Recognition of Public Service

AFTER THE FOURTH Award of Merit by the Mayor and City Council of White Plains, N. Y., was announced last July, the *Reporter Dispatch* of that city said editorially:

"Service such as these four have rendered to our city not only deserves such recognition as the Award of Merit carries, but adds stature to the award itself, making it one to which other leaders will aspire."

The four White Plains citizens who have received the Award of Merit for meritorious volunteer service are:

- FREDERICK C. MCLAUGHLIN, for many years of private and public service, once mayor.
- DR. EDWIN G. RAMSDELL, for outstanding service in the Civil Defense Organization during and since World War II.
- ALBERT W. LOCKYER, for "invaluable" volunteer service as chairman of the planning board.
- CLAUDE N. HITCHCOCK, for service in several civil defense posts, and for fourteen years of service as library trustee (of which board he is now chairman).



The No. 7 fire station, which is located in Emerson Park, wascompleted in 1951. The park comprises a 4-acre area, and the fire station serves as the shelter house for the recreation facility. Directly in front of the station is an obsolete fire truck installed to serve as a unique play apparatus for children. Kansas City's first fire station in a park was constructed in 1925.

Fire Stations and Public Parks Are Good Neighbors in Kansas City, Kans.

By CLARK E. TUCKER, *Mayor*

THIS city's experience with the location of fire stations in public parks has convinced our Kansas City (Kans.) Board of Commissioners that a recently adopted policy favoring such locations for all future firehouse construction will be sound. In keeping with this policy, two new stations, started this summer, are being built in parks, thus bringing the city additional economic and recreational dividends.

The first fire station in a park in Kansas City was built in 1925. Francis W. Blake, Commissioner of Streets and Parks, credits the fire station's very presence with keeping vandalism at a minimum. But the 24-hour surveillance over park property provided by the department's round-the-clock operation is only one of many advantages that we have discovered.

PHOTO COURTESY OF "KANSAS CITY STAR"

(Left to right) Architect Charles E. Mullin, Jr., shows Louis R. Spandle, Fire Department Director, and Mayor Tucker a model of the city's newest fire station to be built in a park.

First, of course, there is the tangible saving of money which would otherwise be spent in condemnation of some other site. To obtain space for the station built most recently on property not included in any park, we were forced to pay approximately $15,000. Not only are the taxpayers assessed that extra amount, but the base upon which it must be levied is reduced by the same figure; and at a time when valuations are scarcely adequate.

Second, the economies extend beyond the initial construction costs involving the fire stations themselves, for we have found that fewer park improvements are required. Small parks, in which the construction of regular recreation centers are difficult to justify, are especially benefited from such a fire station. Toilet facilities, telephones, and shelter provided by the fire station are available to park patrons; so is the experience and training in first aid and artificial respiration possessed by every member of the fire department. "We patch up a lot of boys and girls every year," Assistant Fire Chief Glenn Brunk, in charge of the newest park station, explains. "And they always forget their hurts when one of the men offers to show them the apparatus."

Old fire trucks no longer fit for active service are

The above site plan shows how one of the two fire stations to be built in the coming months in Kansas City, Kans., will be fitted into Klamm Park, an existing much-used multipurpose 32-acre recreation area.

installed by the city recreation commission in several parks. Following an enthusiastic reception given the original "Kensington Kiddie Kompany," similar installations have now been completed at other sites. "But the kids still naturally prefer to be around the real thing whenever possible," Chief Brunk says. Furthermore, the children do not interfere with the fire department's regular operation.

Third, we believe that a fire-fighting company is more efficient if its station is located in a park, because the firemen are more content. This in turn promotes better public relations. Despite the time taken up by regular instruction sessions, caring for equipment, station house-keeping, and a new training program in which individual companies cruise their districts to become more familiar with its physical features, firemen on duty an average of 72 hours every week still must spend a considerable amount of time just standing by.

"It's much more nerve settling to sit outside a station surrounded by trees and other park activities," Louis R. Spandle, our director of the Fire Department, points out. One of our fire stations overlooks a softball diamond lighted for night games, an outdoor roller-skating rink, and an area where ice-skating is planned in the future.

Tennis courts, a small children's playground, and a ball diamond are near the other station. One of the new stations will be built only a short distance from a battery of lighted tennis courts used for city-wide tournament play. That park also includes a baseball diamond equipped with lights.

Parks Do Not Suffer

Finally, we have found that the park atmosphere does not suffer from the fire apparatus and its accompanying noise. An average of only about one emergency run requiring a siren is made by each station each 24 hours, Mr. Spandle observes. The departure and arrival of fire apparatus also provide interesting diversion for park patrons.

Existing recreation areas, or space in which additional facilities are planned, will not be affected by our new fire stations. Space occupied by the two now in use was not formerly utilized in the park program. Removing such spare space from the park department's responsibility and maintenance budget saves still more money and time for the improvement of other property more adaptable for recreation.

"Any city that can't make its tax dollars stretch two ways at the same time in this day and age is in bad shape," Earl B. Swarner, our Commissioner of Finance, Health, and Public Property, remarks. Mr. Swarner has charge of all city buildings, even the fire stations in parks.

In conclusion, we have found that our policy of building fire stations in parks has resulted in such advantages as (1) economies in total station costs, because expenditures for land are eliminated; (2) closer park supervision resulting from the 24-hour presence of firemen; (3) greater efficiency from the firemen because of their better station surroundings, and (4) increasingly stronger public relations between city employees and the general public as a result of their frequent contacts in the park atmosphere.

A Critical Comment on the Foregoing Article

By JOSEPH PRENDERGAST, *Executive Director, National Recreation Association*

THE article: "Fire Stations and Public Parks Are Good Neighbors in Kansas City, Kans." raises the question not only of fire stations in parks but the whole current problem of the encroachment on public park and recreation areas for the construction of buildings and facilities whose purposes are in no way related to the purpose of the area. This is but one instance, and apparently a successful one, of a steady, persistent pressure to divert recreation lands to other purposes in the name of economy.

In addition to fire stations, there have been efforts to alienate park property for housing, armories, civic centers, schools, hospitals, and even commercial structures. The eternal vigilance of public leadership, aware of the value of these park and recreation areas to the community, has been the saving factor in their protection. It has prevented the decimation of our park heritage which would have occurred if these special interests, however sincere their motivation, had had their way with our open spaces.

We quite agree with Mayor Tucker of Kansas City, Kans., that fire stations and public parks can be, and

frequently are, good neighbors in the cities of America. They can be good neighbors, however, only if they are "neighbors" with their own areas and not if one—the fire station—is a "squatter" and "free rider" on the other, the public park.

The cost of land may be saved to the fire department budget, but it only means that the cost is shifted to the park department budget if the park department has to acquire additional land to make up for the land taken over by the fire station which, of course, it should do.

The other economies mentioned would be just as valid if the fire station was located on its own property immediately adjacent to the park instead of in the park itself. The same comment could be made as to the use of "old" trucks for play and, in addition, the danger of "new" trucks, on the way to and from fires, to children using the parks would be lessened if the fire station wasn't actually located on park property.

The Questiton of Morale

Of course being located in a public park improves the morale of the firemen just as it improves the morale of every other person who uses the park, but is the morale of an entire community any less important than the morale of the firemen? The morale of the firemen could be just as high if they were on their own property next to a park and the morale of the community would not have been lessened by the loss of much-needed park areas.

Mayor Tucker's contentions can be thus reduced to the one he started with: locating fire stations in public parks helps the immediate budget of the fire department. That is all it does. On the other hand, it greatly increases the future budgets of the park department, endangers the lives of children, and lowers the general morale and land valuation of the neighborhood.

With the desperate need every community now has for more open spaces in view of the steady increase in population and the expanding amount of nonworking time becoming available to the American people, a reduction in the amount of public parks is the most serious mistake a growing community could make.

Is it an economy to reduce park acreage bit by bit in a growing community where such acreage should be steadily increasing and not decreasing? If so, why parks and recreation at all? Why not alienate it freely as other new municipal facilities are needed?

Encroachment may be justified if the city has more acreage than it needs, but there are few, if any, cities so fortunately endowed. In fact, fire stations, like police stations, schools, and other public services, are usually located on a "neighborhood" basis and in built-up areas where recreation areas and other open spaces are usually all too inadequate now. To use them for other purposes for the sake of immediate economy in other services is to penalize future generations who will have to recapture areas at a greatly increased cost.

See also editorial comments on page 19

Civic Center for Norfolk

THE City Council of Norfolk, Va., on July 20, voted to adopt the recommendation of the City Planning Commission to establish an 11.36-acre tract as a site for a multimillion-dollar Civic Center project to house the municipal governmental functions.

The Civic Center site will include a new city jail and police headquarters building, a new courts building, a new municipal building, and off-street parking facilities and allows space for the construction of future municipal buildings.

Three locations were considered with one—the "C" site shown on the accompanying map—receiving a preferential nod from the Planning Commission.

The Council, in accepting the recommendation of the planning group, directed City Manager H. H. George, III, to acquire through purchase or condemnation the 11.36 acres of land and directed that priority be given to the police headquarters and jail building.

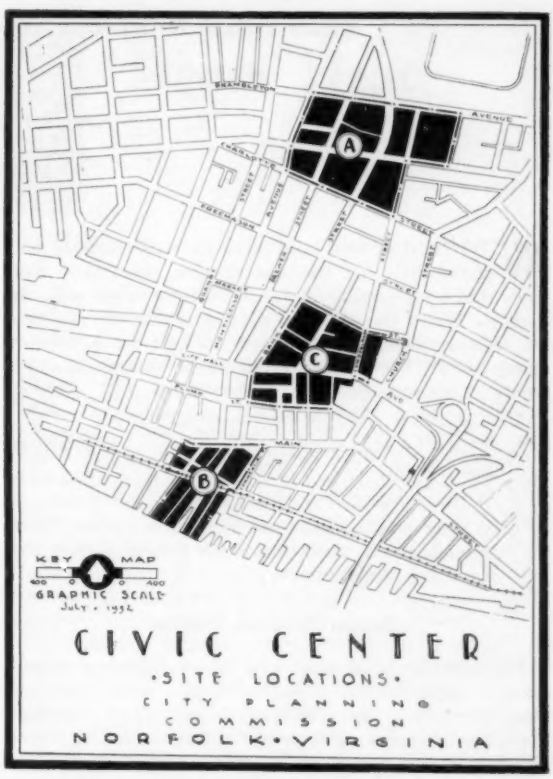
The reasons given for the Commission and Council choosing the "C" location are:

1. It is convenient to the central business district but will not interfere with its expansion.

2. It is served by major highways leading to all parts of Norfolk and the surrounding area and is adjacent to the approaches of the Elizabeth River Bridge Tunnel system entering the business district.

3. It commands a dominant position where it will be seen by a large number of persons, thus becoming a source of civic pride.

DONALD P LOCKE
Planning Engineer
Norfolk, Va.



Of the three sites considered for Norfolk's new civic center, the "C" location has been chosen and is now being purchased.

When completed, the reservoir will provide storage for 4,000,000 gallons. (Right) A new Tork-Master electric valve operator fits snugly on a 30-inch Chapman gate valve.

Push-Button Reliability

Whittier, Calif., puts more dependability into its enlarged water system by using a new type of electric valve operator

By K. R. WARREN
Superintendent of Water
Whittier, Calif.

WHITTIER is now improving its water supply and distribution by the use of new, automatic controls that offer a reliability that we have never enjoyed before. When the present work is complete, we will be able to determine instantly at our main booster pump station the following important data about operation in outlying places in our system:

1. The water level in any reservoir system
2. Which booster pumps are operating anywhere in the system
3. Which booster pumps are still not operating
4. Which pumps are not operating when they should, or are operating when they shouldn't (by an alarm system)

Remote-Control Valves

We will also be able, at will, to open or close valves at our wells located approximately a mile from the booster station, by the use of electrically operated Tork-Master valve operators. Furthermore, to provide for continuous operation during emergency or disaster periods, we have installed a dual head on one of our large 4,500- gpm well pumps so that it may be pumped either by a 170-hp Buda gas engine, or an electric motor.

Whittier started the current program about one year ago by authorizing an expenditure of $2,380,000 to pay for these improvements. We recently completed the installation of several 16-, 18-, 21-, 24-, and 30-inch water mains, using concrete cylinder pipe supplied by the American Pipe and Construction Company and the United Concrete Corporation. We also installed two Johnston 2,500-gpm turbine-type booster pumps at our main station. We are constructing one 4,000,000-gallon and two 500,000-gallon reservoirs and are installing new pumps on some of our wells. The pumps are products of the Layne and Bowler and the Wintroath companies.

Our main booster station pumping supply is now controlled by the water level in the first reservoir on the line. As soon as this reservoir is filled to its optimum capacity of 10,000,000 gallons, we must partially shut down our station, since we have no control from the booster plant of the water levels in the other seven reservoirs. This, of course, is just the reverse of the procedure we should be using. The last reservoir on the line, obviously, should provide the control.

In accordance with the design developed by Koebig

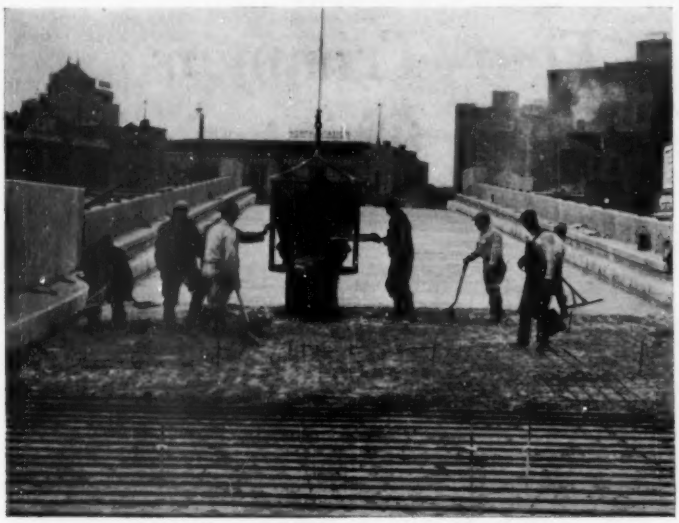
and Koebig, consulting engineers of Los Angeles, we plan to install altitude and water-level control valves on each reservoir. Under this system, as soon as the first reservoir on the line is filled, the valve automatically closes and pumping continues until the last reservoir is filled to capacity. The valves automatically open as the demand requires. We selected Clayton valves for this purpose which were purchased from Cla-Val Company of Alhambra, Calif.

We also decided that certain key valves in the system, ranging from 24 to 31 inches, should be electrically controlled so that they could be shut down at a moment's notice if necessary. However, when we faced the selection of a valve for this purchase, we found that the purchase of electrically operated valves was a major problem, for manufacturers of these products were so far behind that delivery was delayed for several months. This deterred us from making a purchase.

At that time we discovered the Tork-Master valve operator, manufactured by the McBain Corporation in Los Angeles, when the company's representative demonstrated the valve operator at our city yard. We studied the operation of this equipment carefully and became convinced that it was foolproof and could in no way damage the valve in its operation.

Other factors that helped us to decide were the company's ability to make delivery within 30 days and the reasonable price of the product. A representative of one of the larger valve companies concurred that the use of the operator was wise.

When our program is complete, our reservoir capacity will total 23,000,000 gallons. This capacity will allow for the city's anticipated expansion. Undoubtedly, this new construction will provide our people with the assured convenience of push-button reliability for its vitally important water supply.



A grid of wrought-iron pipes will keep this ramp clear of snow next winter.

Snow Removal By Steam Heat

BOSTON will soon benefit from a steam-heated roadway, the nation's largest snow-melting installation, when the city completes its Aerial Highway, at a cost of $75,000,000 to $100,000,000.

Heating pipes are being installed to melt snow and ice on all the access ramps to the elevated highway and thus insure safe traction during the winter months. The snow-melting system in each ramp extends from the surface level to a point approximately halfway—300 to 400 feet—up the ramp. This lower section of ramp to be heated is constructed on an earth fill placed between concrete retaining walls.

The upper section of the ramp connecting the expressway is of open-steel viaduct construction which does not lend itself to being heated for the economical removal of snow and ice. But the proximity of the arterial highway to the underground steam distribution mains of the local power company made it feasible to install the snow-melting system.

Steam is piped from existing mains to a heat exchanger in a pumphouse located beneath the ramp structure. Each pumphouse, serving four ramps, also contains a circulating pump, expansion tank, solution make-up tank, and control equipment.

The steam heats an ethylene glycol solution which is then circulated through the welded pipe grids embedded in the cement concrete roadway base. This base, 9½ inches thick, has a wearing surface of 2½-inch-thick bituminous concrete.

The grids consist of Byers wrought-iron pipe 1 inch in diameter welded into headers 2½ inches in diameter. While these were shop fabricated, they were transported to the ramps to be set into position and welded together. This reduced field work to a minimum.

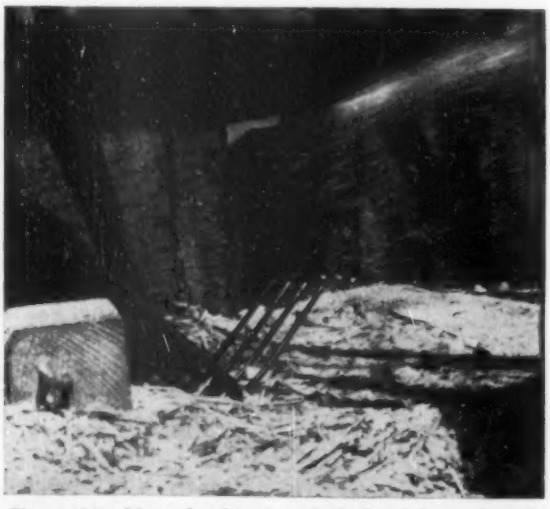
The heating system under the 14 ramps will be started manually at the first snowfall or on prediction of snow by the weather bureau. The rugged welded piping may be left completely cold without fear of freezing during extended periods of clear cold weather, or the circulating solution may be set at a minimum temperature which can be maintained during periods of unsettled weather.

(Above) A 4-inch limb is fed into the chipper without any difficulty. (Left) The composted chips produce a rich, black soil that is worth at least $25 per cubic yard.

Four Trimmers Per Chipper

By C. A. HOOK, *Superintendent of Parks, Baltimore, Md.*

ONE mechanical chipper can comfortably dispose of the trash produced by four high-tree trimmers working on linden, maple, and elm trees without any delay in operation. The same chipper, however, can handle the brush generated by only two such trimmers if they are trimming over-mature silver maple and Carolina poplar trees, or if they are removing living elm, plane, or Norway maple trees for street and footpaths for better service to traffic and pedestrians.



The machine blows the chips into the body of the truck, making a dense, easily handled load that reduces labor needs.

The Forestry Division of the Bureau of Parks has used an Asplundh brush chipper since April 1950. We have mounted this unit on the chassis of a 1½-ton Dodge truck, powering it by a Davey split-propeller shaft and controlled by a Pierce belt-driven governor with the engine speed indicated by a Sun tachometer.

The chipper blows the processed tree limbs into a ventilated body of 350 cubic-foot capacity. The operator has no difficulty chipping up limbs 5 inches in diameter cut from green trees, or 3 inches in diameter from dead trees. Larger limbs present difficulty in chipping and produce excessive wear on the blade in the chipper mill.

Without the chipper, we would have to make three trips per day to the dump with a 1½-ton stakebody truck, carrying brush from the four high-tree trimmers. Each trip would require the driver and one man to be away from the job for one hour. Furthermore, someone must be on hand when brush is burned, generally requiring at least one additional man-hour per load. The chipper enabled us to eliminate the need for the truck, driver, and one man to leave the job.

Furthermore, we are using the chips to mulch rose and azalea beds and are composting the balance to help us in tree planting. We also utilize the chips to cover bridle trails and as litter for the cages of zoo animals.

Our figures show that we reduce the total man-hours from 1.23 to 1.13 per tree during routine pruning. We avoid the nuisance of burning and maintaining a dumping area. The soil produced by composting is worth at least $25 per cubic yard. Furthermore, we now can cultivate roses and azaleas free from weeds and at a substantial saving of man-hours.

Do You Want to Lose Your Fire Alarm?

By A. C. HUTSON*

THE great increase in the number and distribution of commercial telephones in the United States in the last 20 years has led many people to believe that other communication systems for calling emergency aid could be discontinued. This thinking has been applied particularly to means of calling the fire department, and several cities have gone so far as to discontinue existing fire-alarm systems.

Rural areas, most villages and towns, and quite a number of cities, are already depending on home and business telephones as the sole method of reaching the fire department. Even where there is very extensive coverage of street fire-alarm boxes, a high percentage of all fire alarms are transmitted via the home and business telephone.

That this extensive use of the services of the telephone company is normal and may readily grow greater is obvious from the fact that there's a telephone for every three persons in the nation. However, the American Telephone and Telegraph Company reports that only 69% of all homes have telephones, and many of these are on multiparty lines.

The telephone companies have provided a highly effective commercial communication system at a cost to the user that is reasonable.

The question that must be answered by the cities, towns, and villages, and some rural areas, is whether the telephone is all that is needed for such disaster service as fire?

A fire is discovered in a home or place of business. The telephone is right where you have used it many, many times and you can find it in the dark. So you, or I, would naturally grab it. With the dial, or automatic system which is soon to be generally in use, the procedure is as follows: You hear the dial tone; you dial operator and tell her you "Want to report a fire." Simple, isn't it?

But you were excited and forgot to wait for the dial tone. So you could wait all night and not get the operator. Ot it was a party line and you could not get the other party to hang up. "Bosh," you say, "no one would refuse to give up a line if someone wanted to call the fire department." But it has happened many times.

Other factors may influence your ability to reach the fire department through the telephone. One is insufficient operators. The main value of automatic telephone service is that few operators are needed. The main headache of the companies is that they cannot get as many as are needed. What user of the telephone has not had appreciable delays in getting the operator? This is especially true at the time of a disaster.

Insufficient trunks between centrals is another factor. The caller is in Orange 5 and fire alarm headquarters is in Orange 4. There is a limited number of trunks between these two, and at some hours of the day they may all be busy. This is a handicap whether you dial "Operator" or you dial the fire department direct.

Which Fire Department?

You ask the operator for the fire department. Which one will she connect you to if your town is served by a central serving several communities, each of which has a fire department? Of course, the operator is trained to ask you "which fire department?" But maybe you are so excited you just shout: "I want the fire department!" There was a case once where an excited person asked for the New York fire department for a fire in Jersey City.

Even though the person wishing to reach the fire department knows what number to call, some of the aforementioned factors may prevent the call from being made. In addition, there are further facts that are important. Most telephone line entrances are in the basement or cellar, and a fire in that area may readily put the phone out of service. In industrial establishments, stores and offices, there is usually a PBX and an operator, who won't pay any attention to a flash from the stockroom when the boss wants a long-distance call.

So much for the use of telephones in homes, stores and offices. What of the telephone street box system as operated in Miami, Fla.? Lifting a receiver signals in fire headquarters the exact location of the box. The person desiring to send in an alarm need do no more than lift the receiver. If he can talk coherently, so much the better. He can give the additional facts of street address, size and kind of fire.

Until recent years, the telephone company has not been at all keen to take on this business. The company will now furnish a proposal for a system only at the request of a city.

What causes a city to make such a request? Perhaps Miami is typical. The existing fire alarm telegraph system is permitted to run down to a point where major expensive repairs and extensions are essential. Boxes will carry "out-of-order" signs for weeks or more.

The city must either rehabilitate its fire-alarm telegraph system or investigate the telephone. The City of New Orleans recently did just that. Its fire-alarm system had been installed in 1900, but had not been extended to protect its now greater size and importance. The city recently employed an engineering firm to report on present needs. This firm, which was in no way influenced by precedent or connection with any supplier, recommended the installation of a separate and complete fire-alarm system of 4,000 boxes (one every two blocks) at a cost of $2,700,000.

With the telephone company now rendering alarm service for civil defense, a fire-alarm system, other than that which could be furnished by the telephone company, was believed essential for the needs of the fire service, not only for normal fire calls but for the catastrophies produced by storms, tornados, floods and possible enemy attacks.

Of even greater interest is the fact that on the basis of giving equal fire-alarm service to all residents, a city-owned system would be one-third the cost of leased service from the local telephone company.

* Consultant in fire prevention and fire protection, East Orange, N. J., formerly Assistant Chief Engineer, National Board of Fire Underwriters.

The City Tells Its Story

Municipal Public Relations

Edited by PAN DODD WHEELER
Executive Director, Government Public Relations Association

Got a City TV Show in Mind? Tips from Experienced Cities Help

OCTOBER is opportunity time for the city that wants, needs, and can take care of a weekly television program. Right now television station directors are reviewing local program possibilities to mesh such programs with the new fall network lineup. But—before you commit the city to a weekly television production—take a look at the hard-work side of the program, as well as the selling potential it has for your city. Three veteran municipal producers of city television programs offer here an assist for municipal officials who are considering a TV debut for their city operations.

Jacob Dumelle, administrative assistant to the city manager at Peoria, Ill., has a 26-weeks series of "Municipal Report" under his belt. Hayes Richardson, welfare director and chairman of public relations for Kansas City, Mo., has been responsible for the weekly 30-minute "This is the City" for more than two years. Russell Bremer, secretary of the Toledo Commission of Publicity and Efficiency, has long been concerned with "Your City Reports" in Toledo.

These three agree that careful planning, hard work, time, and TV know-how are necessary for a successful municipal program. And they all say, in effect, that TV is no panacea for a city's public relations.

It will not replace consistent reporting through other media, work with neighborhood councils and community study groups, and city efforts to educate and inform people.

But, they say, television's ability to "show as well as tell" people about city government, makes a TV program a tempting showcase for the municipal government operations, the city officials, and the services the city provides.

While an unrehearsed, informal atmosphere is the aim of all three municipal TV producers, they have found that this can be achieved only *with* the use of either a full script or a careful topical outline and *with* rehearsals. Kansas City uses a complete script for audio and video. Peoria and Toledo shows are produced from outlines only.

Kansas City's Mr. Richardson says that he has found the use of citizens on the program and of city personnel "below top level" injects enthusiasm, spontaneity, and naturalness into the city program.

These people "enjoy participating," he reports, and "by working on the TV program, develop a greater sense of being part of the city." As many city staff people are used as possible not only on the program, as participants, but also in preparing data and props for use on the show.

"First Names Always Used"

Mr. Dumelle at Peoria says that "first names between participants are always used" as a means of achieving the "desired informal effect." He believes that the outline form of the scripts "encourages extemporaneous remarks" and that these "keep the program alive."

He has found, too, that citizens make good participants and suggests that "to allay their nervousness and that of city officials," it is well to "keep them occupied answering the questions of a regular emcee on the show."

Toledo keeps its department heads and other city personnel on the TV show busy with questions or demonstrations. The WSPD-TV announcer who works as a regular on the city program keeps the program moving with his requests that participants show him or tell him about their work.

Scenic Props

Kansas City is the only one of the three which has exploited the use of scenic props, but all have proved the effectiveness of visual aids. Filmed sequences, charts, graphs, blackboards, photographs and drawings—on slides or drop cards—can spell the difference between a good or poor presentation.

In addition to these, Kansas City thinks its "comparatively small expenditure for 28 scenic props" was a good investment. Scenes include flats of shrubbery, buildings, desks that can be grouped for panel and roundtable use, hollow columns for outdoor vistas and railings and benches. A replica of the city's manager's desk was built and is part of the city program equipment.

Kansas City has also had good luck in borrowing movies from private firms for use on the city's show. Mr. Richardson reports that industries, contractors, and builders often film activities that are "closely related to city operations or projects." He has found such groups "more than willing to have us use their films."

Positive identification of the municipal program is desirable, Kansas City, Peoria, and Toledo producers

THESE PROGRAMS SCORE FOR CITIES

Your City Reports
Toledo, Ohio. WSPD-TV — Saturday, 1:15 to 1:30 p.m.

Municipal Report
Peoria, Ill. WTVH-TV — Friday, 10:15 to 10:30 p.m.

This Is the City
Kansas City, Mo. WDAF-TV — Monday, 10:05 to 10:35 p.m.

TV—Peoria's Showcase

The Year in Review **is presented by Mayor Robert D. Morgan and Councilman William Kumpf (right) on the city's weekly television program, "Municipal Report" at Peoria's station WTVH-TV.**

Staffing the City **was the subject on Peoria's weekly 15-minute show when City Manager George E. Bean and Councilman Warren Kinsey (below, left) were program participants.**

Visual Aids, **like those on the wall, are used on the Peoria TV show. (Below, right) Captain George Karl explains the work of the police to Jacob Dumelle (seated) administrative assistant to city manager.**

have found. Kansas City's format includes a 50-second film opening with theme music and narration, 19 minutes of presentation of a project, operation, or unit of the city government or related group, and 10 minutes of "over the city manager's desk" during which the city manager either discusses some matter or answers inquiries.

Peoria and Toledo use identification slides and theme music to introduce their programs. Both are 15-minutes in length and follow a question-and-answer format with one or more participants, in addition to station personnel who appear as regular narrators on these shows.

Program material abounds, spokesmen for these three programs have found. Kansas City has spotlighted not only city operations but also those that are related, community-wise, to the city government. All three men warn that program possibilities must be culled, however, on the basis of newsworthiness and timeliness.

The opening of the municipal operetta season in Kansas City is the appropriate time for presentation of its stars, history, or program for the season. How Toledo clears the streets after a big snow is seasonal TV program material only at a certain time of the year. The use of voting machines in a Peoria municipal election is most welcome on a TV show just before a municipal election.

Demonstrations of how city service is performed is a favorite method of presentation by the three TV-producing cities. Such demonstrations are low in cost, are illustrative and lively.

City Services Demonstrated

Kansas City, for example, demonstrated the work of the food-handling section of its Health Department by showing a waitress setting her table and serving food with two food handlers for customers.

Peoria recently did a program with its fingerprinting expert going through every step of lifting fingerprints in a police case. Toledo turned an unlikely program subject into a good show when its landscape gardeners demonstrated how city crews prune and care for trees in the city.

While Toledo and Peoria correspondents did not mention the use of controversial program matter on city TV shows, Kansas City reports that it uses such material but is careful to "present all sides." Mr. Richardson writes that "elements of controversy, if held in check, make stimulating programs and such programs are encouraged by broadcasters."

TV-planners in Kansas City make it a practice, in presenting such program material, to select participants who "have status among their fellow citizens." Mr. Richardson thinks that this kind of program "indicates to our people that policy-making in Kansas City is based on full consideration of all interests."

In all three cities, TV time is provided without charge to the city by the station management. The cities pay for props and special effects for their programs. The cities' representatives make all arrangements for the show in consultation with the station program director or his designate.

Vital to the success of a municipal television program, the three TV spokesmen conclude, is "proper contact with the TV station." Kansas City points out that "stage hands,

(*Continued on page* 120)

Everything in the Erie sewage-treatment plant will be enlarged except the three digesters if present tests are successful. These digesters won't need the help of new tanks that will cost $300,000 should present pilot studies prove completely satisfactory.

A $300,000 *Saving*

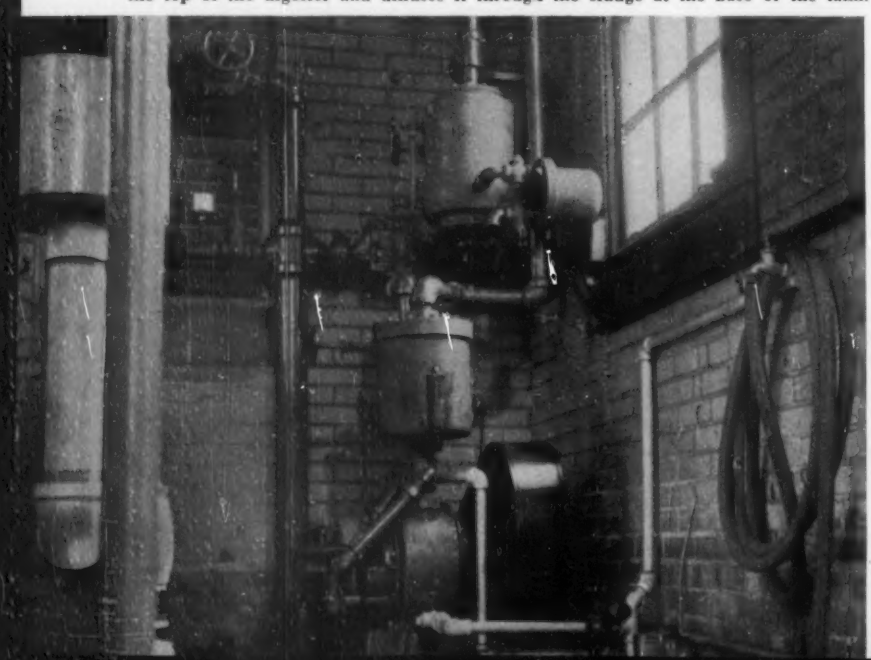
Erie, Pa., tests an accelerated digestion process for its enlarged sewage-treatment program that promises big savings in over-all plant costs

THE city of Erie has $300,000 at stake in a full-scale digester study that is now under way at the sewage-treatment plant. Mayor Thomas W. Flatley and his city council hope that it works; City Engineer Fred A. Gorenflo and Sewage Treatment Superintendent George N. Crawley believe that it will; the city's consulting engineers, Consoer, Townsend and Associates, of Chicago, and the Pennsylvania stream-pollution abatement authorities are willing to be shown.

The data accumulated during the initial operation period show that the Catalytic Reduction Process has met the contract requirements. The complete study will determine whether the city can use the new catalytic digestion process developed by Professor Philip Morgan of Iowa University, and which is being offered commercially by the Chicago Pump Company. The method has already proved successful in the digestion of sludge from primary settling tanks in the Columbus (Ohio) plant, which includes excess activated sludge.

Erie has inaugurated a major revision of its old sewage-treatment plant to boost its capacity from 20 mgd to 45 mgd (million gallons daily). The improvements will also increase purification so that treatment will remove 70% of the five-day BOD and 80% of the suspended solids.

In the catalytic process used at the Erie plant, the compressor takes the gas from the top of the digester and diffuses it through the sludge at the base of the tank.



Final Check Delayed

However, the enlarged plant will need no new digesters if the study can prove that the catalytic process will work as well in Erie as it has at Iowa University or at Columbus, Ohio. A final check on its effectiveness when applied to sludge removed from Erie's secondary treatment process cannot be made until the extensions are in operation.

The old plant has three digesters with a total capacity of 375,000 cubic feet. The test of the catalytic process on the primary-tank sludge must show that one of these digest-

ers can reduce 25,000 pounds of dry solids per day to a volatile content of between 50% and 55%. If it can, three old digesters, with certain modifications, may be adequate in the enlarged plant. If it cannot, then $300,000 will have to be spent for new digestion capacity designed to conventional standards. The city has earmarked funds for this purpose should the digester study, for any reason, prove disappointing.

The data accumulated to date show that the above conditions set for the test have been met and exceeded.

Test Procedure

The catalytic process requires that gas be taken from the top of the digester and diffused through the bottom of the tank. In this case, a 70-cfm Lammert Compressor removes the gas, delivering it to 18 Precision stainless-steel Saran-wrapped tubes. A Selas flame-type sludge heater keeps the sludge at optimum digestion temperature to encourage digestion and gas production.

With this type of heater, sludge is circulated through the heater constantly; the gas flame increases or reduces automatically when the temperature of the sludge indicates the need. No raw sludge is heated before it enters the tank.

The enlarged Erie plant has been designed to anticipate a 1975 population of 200,000, or 35,000 additional inhabitants in the metropolitan area. The designers expect an average flow of 45 mgd by 1975, or an average contribution of 225 gallons per capita per day. However, the grit-removal units and the primary settling tanks will be able to handle peak flows of 90 mgd and still provide partial treatment.

The design anticipates a sewage containing 175 ppm of suspended solids and 150 ppm of five-day BOD. To meet purity standards required for discharge of the effluent into Lake Erie, 70% of the BOD and 80% of the suspended solids will have to be removed from this anticipated flow. To do this, the design supplies aeration facilities that can be adopted to one of the modified aeration systems, or alternately to split, activated-sludge treatment.

Treatment

If split treatment is used, only a portion of the primary tank effluent will be treated. However, when the conventional activated-sludge type of purification will be used, this portion will lose 90% of the suspended solids and BOD. This then will be mixed with the less thoroughly purified primary-tank effluent to produce a mixture that satisfies the required specifications.

The new plant will be supplied with two Chicago Pump Company Barminutors to shred the large solids so that they can be removed more easily in the primary settling tanks. The Barminutor provides continuous screening and cutting of the solids without removing them from the sewage flow.

The plant also will use a grit chamber that provides a 2.7-minute detention at the design flow. The grit chamber will be aerated to help clean the removed grit.

Primary Settling

The two existing primary settling tanks will be reinforced with four new units whose design capacity is 22.5 mgd. The old tanks provide a detention period of 1.8 hours, a surface overflow rate of 1,400 gallons per square foot per day, and a weir overflow rate of 214,000 gallons per lineal foot per day. The new tanks will have straight-line sludge-collection mechanisms, will provide a 1.5-hour detention period, surface overflow rate of 1,000 gallons per square foot per day, and a weir overflow rate of 15,000 gallons per lineal foot of weir per day.

The aeration tanks anticipate a 25% return-sludge volume and a settled-sewage aeration period of 3.1 hours at a 25-mgd flow rate, using the modified aeration system. The designers provide 20 cubic feet of aeration capacity per pound of BOD in the settled sewage to be tributary to the tanks.

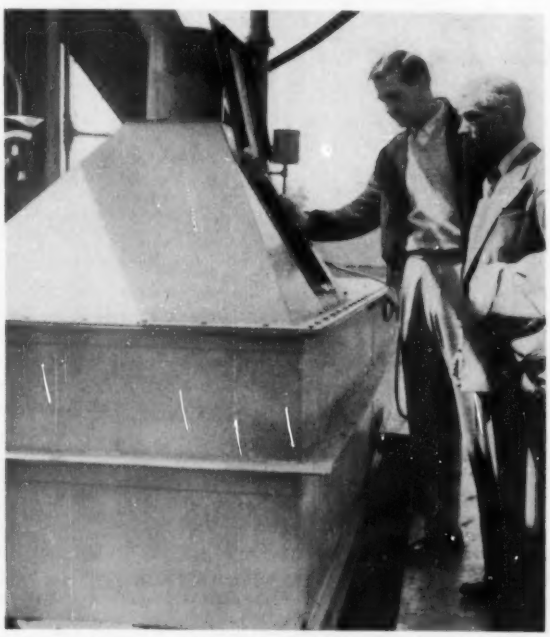
The final settling tanks will be octagonal in shape, nested together to save space. They will each measure 103 feet in width and will have a settling rate of 1,050 gallons per square foot per day when considering the design flow of 45 mgd, plus the 25% added return sludge. Weir overflow rate will be 840 gallons per lineal foot of weir per day, based on the design rate.

Vacuum Filters

The enlarged plant will be supplied with two elutriation tanks, each with a capacity of 92,000 gallons, to process the sludge before it goes to the vacuum filters. The tanks will provide a detention period of three hours, and a surface settling rate of 765 gallons per square foot per day.

Two vacuum filters will dewater the elutriated sludge, making it available as a fertilizer for use by local farmers and nurserymen. At present, the demand is great enough to exhaust the entire supply.

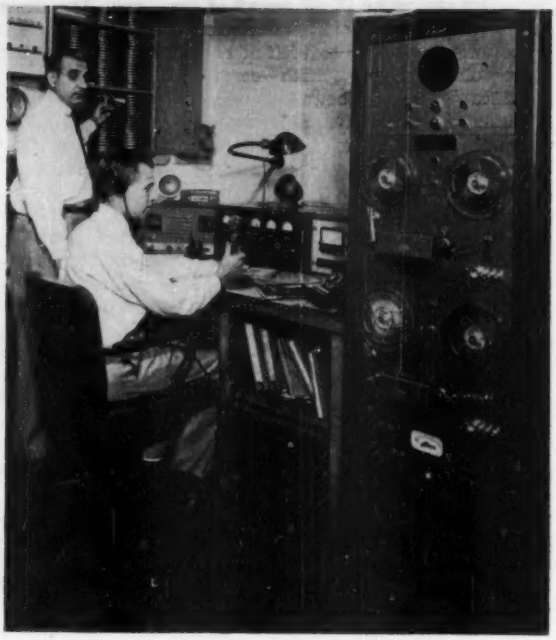
The plant will have a gas storage sphere able to hold 140,000 cubic feet of gas at 40 pounds of pressure. The gas will be used in three engines that supply power to three blowers that, in turn, supply air for the aeration process.



Glen Ehrich, of the Chicago Pump Company, and Superintendent George Crawley examine plant's flame-type sludge heater.

PHOTOS COURTESY OF
MINNESOTA MINING AND MANUFACTURING CO.

There's no mistaking what is being said when a mobile repair unit of the Los Angeles Department of Water and Power radio telephones "Communications Central." Jack Pearson, mobile repair unit driver is calling for help on a repair job.



Radio operator Guy Curley (left) prepares to put a reel of tape on the recorder (right) as he comes on shift. The operator at the mike is Alfred Crampton. Recording equipment is by Presto Recording Corporation, of Paramus, N. J.; emergency radio equipment by Link Radio Corp., New York

Recording All Talks with City Water and Power Trucks

By IVAN L. BATEMAN
Chief Electrical Engineer
Los Angeles Water and Power Department
Los Angeles, Calif.

WITH some 2,100 service trucks and cars on the go, the Los Angeles Department of Water and Power recognized 13 years ago the value of mobile radio dispatching as a time-saving tool in the utility field.

Starting as a war-time baby with a single base station and nine mobile radio units, the radio communication system mushroomed beyond all early expectations and by 1954 was handling 30,000 short-wave conversations monthly with an installation of nine base stations and 230 mobiles.

One of the features of this busy radio communication system is the voice recording of all two-way radio conversations with its mobile units in the field. To handle the greatly increased volume of messages, a modern magnetic tape-recording system was installed in March to replace the outmoded disc records previously used. Results are already apparent in greater economy, foolproof operation, and the hours that are being saved.

Tapes—unlike disc recordings—can be used over and over again. Consequently, after each tape recording has been kept on file for a period of one year, it can be erased and recorded again just as though it were a new tape. Department engineers estimate the usable life of the plastic "Scotch" No. 111 recording tape used to be 20 years or more.

It was in 1941, after balancing benefits versus cost, that the recordings started. One of the reasons involved protection against possible damage suits. Attorneys in the department's legal section have often played back the recordings when preparing a case. They establish the sequence of events and specific occurrences. They have also provided positive evidence of the department's extensive efforts to rectify damaging situations when they have been brought forward for explanation.

Aside from the legal aspects, other major benefits derived from use of the recordings include:

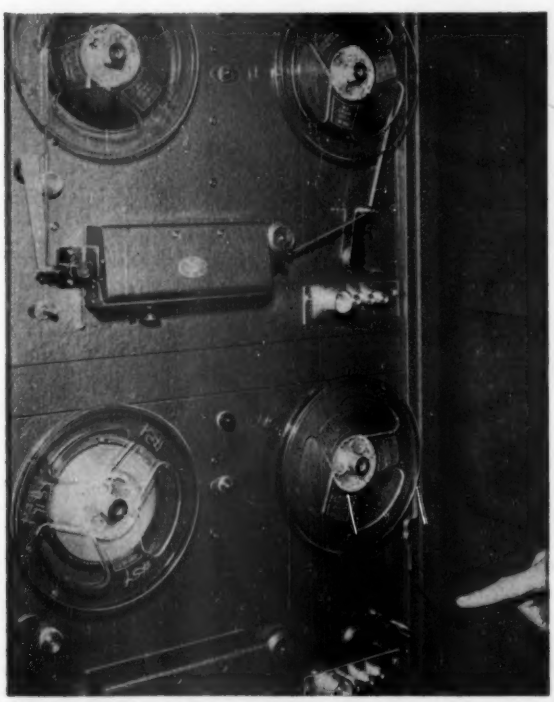
1. Better "circuit discipline" during short-wave contact.
2. Closer supervisional control over the men in the field with the playbacks readily available.
3. Removal of all doubts of responsibility in case of conflicting orders, hence encouraging personnel to be "on the ball."
4. Improved technique for training personnel in use of communications equipment based on typical procedures and good and bad examples available on the tapes.

Modern tape equipment recently installed by the department consists of two rack-mounted Presto Model CM-2 tape recorders operating at a special tape speed of one inch per second. Recording on a dual track provides four hours of continuous recording on each side of a standard 1,200-foot reel of magnetic tape.

Through the use of two ingenious devices offered as accessory items by the manufacturer, tape use is cut to a minimum and tapes need be changed only every other day. One automatically starts the recorder operating whenever a voice comes over the circuit, so that, although the two-way radio is tuned-in 24 hours a day, the tape unit is in actual operation only four or five hours daily.

The second device is an automatic switch on each recorder which starts the second machine whenever the tape runs out on the one in use. Depending on the amount of traffic on the circuit, this allows about 40 hours of radio operation before the unit requires attention.

The installation is located at the department's downtown headquarters in Los Angeles in "Communications Central." Radio operators work in eight-hour shifts around the clock and are responsible for the recorders' operation. Hence, no additional manpower is required for recording.



Close up of the tape recorders shows neat rack mounting possible with units of this type. Note grease pencil identification on the lower left reel. The finger points to the crank-shaped switch that stops one recorder and automatically starts the second unit as tape runs out.

All communications—both from eight separate dispatch points and all mobile units in the field—are recorded. Every 15 minutes the radio operator comes on the air with a voice time signal, which is also recorded.

Prior to adoption of the tape system, none of the department's radio operators had tape experience, but according to the department, no difficulty in handling the equipment has been encountered because of the inherent simplicity of tape-recorder operation.

Cost of the present magnetic-tape system—including a permanent supply of tape—totaled less than the cost of nonreusable recording discs alone during the previous years of operation since 1941.

Purchasing for Milwaukee

By JOS. W. NICHOLSON, *City Purchasing Agent*

PURCHASES are made for all 46 departments, boards, bureaus, and commissions of the Milwaukee city government, plus purchases for the Housing Authority (a quasi-federal agency). Items purchased by the city total over 60,000, in basic commodity classifications.

From 1940 to 1953 it was an ordeal to meet these demands with the established procedure of competitive bids. Limited supplies available in many lines were obtainable only through black markets. The city refused to deal in this market.

Purchasing restrictions were gradually lifted, and during the last quarter of 1953 there was a complete right-about-face from the "buyer's nightmare" which had existed since 1940. Salesmen "flexed their muscles" again and began pounding the road to get a wider distribution of their products.

Many of these had not called on us since the beginning of World War II and they all were again glad to be placed on the city's lists as sources of supply. Salesmen's interviews again became numerous. As suppliers' inventories increased beyond demand, prices in many lines began to weaken during the latter part of the year.

The plague of every purchasing department is the small-order problem. The delivery of large lots of merchandise to the new Municipal Warehouse and subsequent regular monthly distribution of this stock to the various departments, boards, and commissions will aid considerably in solving this problem. However, because of the wide variety of equipment and vehicles operated by the city, it would be impracticable to stock complete parts for every piece of equipment.

Several years ago, the City Hall was so overstocked with old records that no additional filing space could be found. A program was instituted by the city to microfilm permanent records and destroy useless records. A yearly contract for microfilming service for the various City departments was entered into.

However, the expenditures for this service were so substantial that it was deemed advisable to look into the feasibility of having the city install its own Supervisor's office. This study is now being conducted by the Budget Supervisor's office. It is expected that any equipment procured for this purpose will be operated by the Central Board of Purchases, utilizing the facilities of its Reproduction Division.

The big hook pulls the old pavement loose without difficulty.

New Orlean's

Single-Toothed Ripper

City adds pavement removal to duties of multipurpose equipment

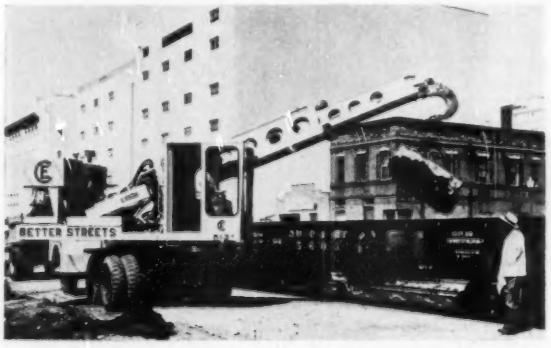
WORRYING old concrete pavement out of place is generally a duty accomplished by "hook or crook." However, New Orleans' City Engineer Albert G. Wyler finds this method can be fast and efficient—provided the hook or the crook is on the end of the right equipment.

This method was initiated when the city required the removal of pavement during rehabilitation work around the historic Southern Pacific railroad station. The many large buildings in the area prevented the use of dynamite to crush the concrete. The presence of underground utilities blocked the use of large cast-iron balls, air-powered hammer, or other impact devices.

Consequently, Mr. Wyler sent for one of the city's multipurpose Gradall units. In place of the shovel, the crew installed a large, single-toothed ripper that "hooked" the concrete out of position, picked it up, and loaded it in a single operation.

As a result, the removal was accomplished with a minimum of labor requirements and quickly enough to permit the entire improvement to move along at a fast pace. Mr. Wyler uses the same equipment for road and street repairs, installation of utility lines, and maintenance of drainage ditches throughout the city.

Then the hook "crooks" itself a little and picks up the slab.



Removal of light-pole foundations required use of a cable.

Denver's Annexation Policy

How Denver obtained $300,000 worth of land for public sites during the first year of its new annexation policy

By GEORGE NEZ
Assistant Director of Planning
Denver, Colo.

FIFTEEN years ago there were few people in Denver's suburbs, yet today, one person out of every five lives in the suburbs. By 1970, one of every two will be living in the suburbs. Already there is slightly more developed residential land in the suburbs than in the city. By 1970, there will be half again as much as there will be in the city.

The situation is typical of many metropolitan areas today. Administrators are beginning to realize the magnitude of the demand that this will place on the parent city to furnish facilities needed by the metropolitan area. It is a dark picture, because there is little chance to achieve metropolitan cooperation and cost redistribution in the immediate future during which huge fringe growth will take place.

In Denver we faced the problem, admitted that we could not soon achieve an ideal solution for the whole fringe problem, and then prepared the best policy we could to protect Denver's interest in annexations. This is known locally as the "8% public site policy."

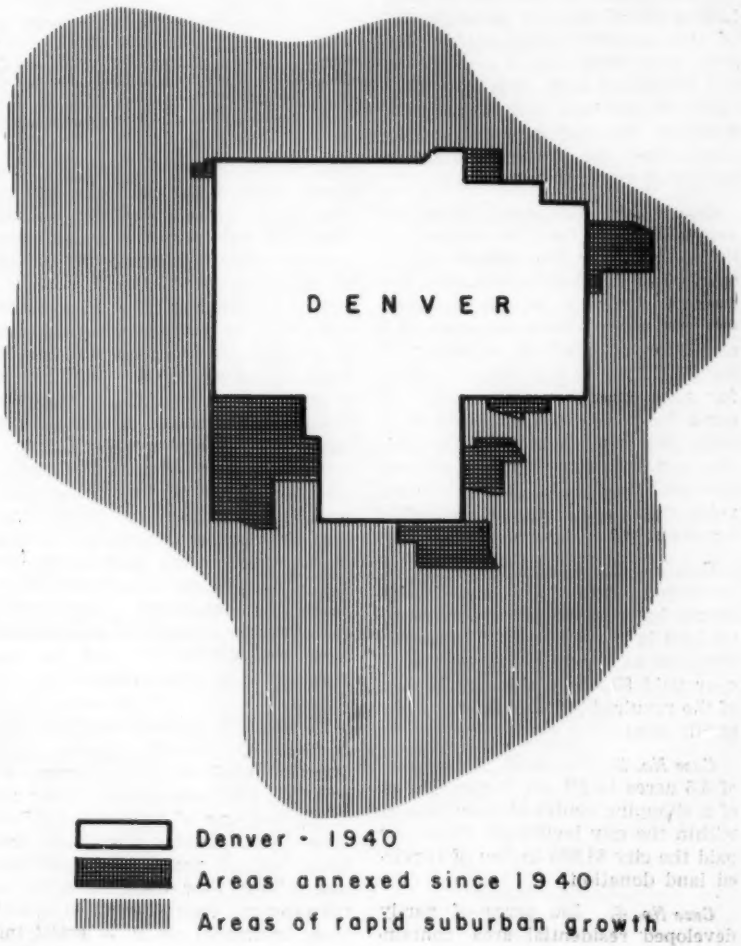
Basis for the Policy

Any residential suburb consisting of family homes and a large child population inevitably gets around to the need for standard municipal facilities, and the realization that small homes cannot raise the kind of taxes needed for the purpose. Then it comes knocking at the city's door for the advantage of annexation. Large-scale suburban builders know this sequence even better than the suburbanites; the builders secure annexation and its assurance of municipal facilities, even before they put a shovel in the ground. The day after annexation, the city must find sites for schools, parks, fire stations; and the day after that, must develop them.

So far, this story might describe many an American city. Denver realized that it would inherit these liabilities as long as annexations could not be made in places and on terms of Denver's own choosing. The city administration, therefore, declared a temporary halt to annexations until it could decide on a policy to strengthen the city's bargaining position. After a year of intense deliberation by the Planning Office, an ordinance was submitted to and passed by the City Council.

At the outset, the ordinance states that it is the policy of the City and County of Denver to encourage surrounding areas to annex themselves to the central city. It then goes on to state that such areas will be annexed providing that:

1. Denver's existing central water supply and sewage disposal plants will not have to be enlarged to serve the area;
2. Arrangements for installing water mains to serve the area have been completed and approved by the Board of Water Commissioners;
3. Throughout the area to be an-



nexed there is substantial compliance with the standards set forth in Denver's building, health, zoning, and subdivision codes;

4. At least 8% of the area to be annexed (or a cash equivalent) is conveyed to the City of Denver—this land or cash to be used to provide for schools, parks, fire stations, or other public sites.

How the 8% Was Determined

Quite simply, 8% of the total land area in the existing city is now composed of school, park, fire station, and other public sites. This is not considered to be an ideal standard, and should not be taken as a fair proportion by any other city thinking of the same thing. Actually 12.3% of all land in Denver's *residential* areas consists of such public sites; this is more nearly the percentage that ought to be levied in purely residential annexations.

During the year following the adoption of this annexation policy, the City of Denver has annexed over 1,200 acres of sites for development. Of this amount, approximately 100 acres have been turned over to the city for public sites. The equivalent value of this land is approximately $300,000. The following paragraphs summarize the four annexations completed under the new policy.

Case No. 1. 660 acres, generally vacant, planned for 2,200 single-family homes under five different developers. The developers entrusted the over-all site plan to one designer, who, with city advice, allocated 18.5 acres for a park, an adjoining 12 acres for a junior high school, 8 acres for an elementary school, and .25 acres for a fire station: total 38.75 acres public site donation. In addition to this land donation, $9,950 was also paid over to the city by the developers, representing the remaining 4 acres required but not donated.

Case No. 2. 8 acres, vacant, to be developed into 41 single-family homes by a single developer. Since no land in the area was suitable for donation as a public site, the developer paid $3,000 to the city in lieu of the required 8% land donation for public sites.

Case No. 3. A small annexation of 4.5 acres to fill out the expansion of a shopping center already located within the city boundary. Developer paid the city $1,000 in lieu of required land donation.

Case No. 4. 590 acres of partly developed residential area, containing 800 houses, 19 business and industrial establishments, and a community shopping center. Three developers of remaining vacant land are building 2,400 more single-family houses. Suitable land for public sites was not available within the subject area, but a total of 50 acres in two parcels abutting the annexation area was selected, in conference with the city, acquired and donated by the developers for park and school purposes, thus fulfilling the 8% requirement.

The Solution Could Be Improved

Denver's 8% formula seems to work fairly well in the case of vacant-land annexation. In a partly developed area, however, the numerous small property owners are reluctant to pay the area's 8% cash donation equivalent to public land required by the policy.

The young families are generally mortgaged to their financial limits; there is no law compelling them to pay into a special fund for the purpose; and finally, there is no agency of government to compute and enforce an assessment in proportion to the size of each property. In this situation the 8% policy appears to be overly rigid.

In a state where laws would permit the following form of tax assessment, it is believed that an *"equity annexation fee"* would serve the purpose somewhat better than the present Denver policy. Under this method, a fee would be assessed as a lien on each property in the annexation area. The lien would be payable to the city as a special tax over a period of years, after annexation of the property.

The size of the fee for each property would equal the amount of equity in city facilities which a similar property within the city has built up over the years in tax payments for municipal capital equipment.

It is hoped that Denver's work will help similarly affected cities to come up with better innovations. The situation calls for reconsideration of the city's basic functions, tax laws, and procedures in metropolitan development.

The City Tells Its Story

(Continued from page 113)

electricians, mike and camera men know their jobs and take orders from their superiors on the station staff. We try therefore, to maintain contact with the program director or his appointee."

The technicians, Mr. Richardson says, "are in a position to improve your program or hamper it. Don't walk in and try to take over. Listen to their suggestions and incorporate them in your plans." A better show can result, he has discovered.

Toledo has found that the professional approach to their program—recognition on the part of the city that the program is important to the city—communicates itself to the TV station people and to citizen participants and makes for a better program. Peoria depends on suggestions from the WTVH-TV staff for increasing the effectiveness of its series.

Kansas City values especially the attitude of the TV station personnel toward the city program. At first, Mr. Richardson says, "their attitude was one of complete indifference—'just another program for which to set props, push cameras and mikes'. Now their attention to the program, their interest in it, and their comments on it is gratifying . . . for we believe they are a hypercritical group."

A municipal television program, Kansas City, Toledo, and Peoria city officials have found out, can be an effective method of reporting municipal operations to the people. Program variety is as endless as the work of the city or as the things and people which city operations are related to or touch in some way.

A city TV program, however, takes planning, time, and hard work as well as the help of professional television producers. Subject matter must be kept timely and the selective use of controversial subject matter is desirable. Utilization of city officials "below top level" on such programs and the use of citizens as program participants contributes to lively shows but requires careful and understanding supervision.

Finally, adherence to the standards of the television station about "what makes a good show" and recognition of station people and their suggestions is necessary.

Armed with these suggestions from seasoned TV programmers, now is the time to discuss October opportunities, for a starter 13-weeks television series for your city, with your TV station management.

A Water and Sewage Works Roundup

A spot check of 36 states shows that the municipal market in improved water and sewerage facilities is firm and active

This survey was conducted by the editorial staff of THE AMERICAN CITY

ALABAMA

In Alabama, the little cities are out hustling for better and better water supplies. Currently, 15 Alabama cities either are working on water-works improvements or propose to shortly. Of these, 10 are in cities with populations of less than 5,000.

One city, Steele, with fewer than 1,000 inhabitants, is building a complete new system that includes a well, elevated tank, and distribution piping. Another city, McKenzie, also with less than 1,000 people, will have a new elevated tank. Extensions to its distribution system over work proposed or under construction in the remaining cities can be classified as follows:

City	Population	Types of Improvement
Auburn	13,000	Filter plant addition
Bridgeport	2,400	Filter plant
Clanton	4,600	Filter plant addition
Cullman	7,500	Filter plant addition
Florence	24,000	Filter plant addition
Hartsboro	920	Iron removal plant
Jacksonboro	4,750	Filter plant addition
Livingston	1,700	Filter plant addition
Montevallo	2,000	Filter plant addition
Piedmont	5,000	Filter plant addition
Sheffield	11,000	Filter plant addition
Summiton-Dora	1,000	Filter plant addition
Tuscaloosa	47,000	Added supply
Foley	1,300	Well
Montgomery	107,000	Wells
Scottsboro	5,000	Wells
Thorsby	630	Wells
Auburn	13,000	Pumping station
Gadsden	56,000	Pumping station

The town of Elberta (population 350) is planning to build a water supply that will command big-city respect. It will consist of a well, elevated tank, and a complete distribution system.

The larger Alabama cities are emphasizing sewage-treatment progress. Four cities have plans for proposed construction; of these, only Albertville (population 5,000) can be classified as small. The other cities are Florence, 50,000; Mobile, 125,000; Montgomery, 90,000; Ozark, 10,000; and Prichard, 30,000; and the Jefferson County Sanitary District, 40,000. The state also is building sewage-treatment improvements at its Atmore Prison, and the Gadsden Tuberculosis Hospital.

ARKANSAS

F. L. McDonald, Chief Sanitary Engineer of Arkansas' Board of Health, reports that with the exception of possibly one relatively large water-works project, construction during 1955 will follow the trend of this year as follows:

Water treatment plants and wells	$2,000,000
Water system extensions, storage tanks or reservoirs	5,500,000
Sewer system extensions	2,500,000
Twelve sewage treatment plants	3,000,000

ARIZONA

Thirteen Arizona cities are planning to improve their sewage treatment works according to George W. Marx, Director and Chief Engineer, Bureau of Sanitation, in the State Department of Health. The status runs as follows:

City	Population	Action	Status
Bagdad	1,500	Replacement and enlargement	Active planning
Casa Grande	4,200	Replacement and enlargement	Active planning
Chandler	4,500 (design)	Enlargement	Construction
Clifton	4,000	Plant replacement	Plans complete
Duncan	800	New plant	Active planning
Eloy	5,000 (design)	New plant	Plans complete, financed
Florence	4,000 (design)	Plant replacement	Construction
Kingman	400	Modernization	Active planning
Mesa	17,000	Enlargement	Active planning
Randolph (Children's Colony)	1,250 (design)	New plant	Financed
Superior	1,500	New plant	Active promotion
Tombstone	800	New plant	Active promotion
Tuba City	1,150	Enlargement plus secondary treatment	Bids received

In addition, 12 cities or sanitary districts are expecting to complete extensions to their sewer-collection system in the future. Other small projects are being financed and are in various stages of progress by the Indian Service.

CALIFORNIA

In California, Vincent Bacon, of the State Water Pollution Control Board has records showing proposed sewerage projects estimated at more than $62,000. Sewerage projects now under construction will have a completed value of more than $24,000,000. The proposed projects run as follows:

City	Project	Population (design)	Estimated Cost
Aromas S. D	Plant and sewers	2,000	$ 125,000
Brea	Sewers	2,500	245,000
Capitola	Submarine outfall	6,000	50,000
Cardiff S. D	Plant, sewers	5,000	260,000
Central Contra	Plant and system additions	57,600	4,000,000
Ed Cajon	Sewers	20,000	477,000
El Centro	Sewers	12,481	600,000
Fillmore	Plant and sewers	3,579	596,000
Huron	Plant, sewers	2,500	190,000
Isleton	Plant	3,500	208,000
Lake Arrowhead	Plant and sewers	7,000	665,000
Los Alamitos	Sewers	8,000	300,000
Los Angeles Cty. S. D	Plant improvements	2,300,000	5,000,000
Manteca	Plant relocation	3,800	.....
Martinez	Plant	8,500	670,000
Milpitas Cy. S. D	Plant	7,000	200,000
Modesto	Plant and sewers	30,000	1,225,000
Montecito S. D	Sewers and plant	5,000	1,000,000
N. River S. D	Plant	29,000	550,000
Oro Lama S. D	Plant enlargements	284,000	234,000
Oxnard	Interceptor sewers	21,500	450,000
Palm City S. D	Plant, sewers	10,000	810,000
Petaluma	Plant and sewers	3,000	119,700
Planada	Sewers and plant	1,500	150,000
Plymouth	Plant, outfall	750	30,000
Redlands	Plant, sewers	16,000	265,000
Rio Linda S. D	Plant and sewers	5,000	463,000
Rubidoux S. D	Plant, sewers	4,000	450,000
Sacramento Cy. S. D	Plant and sewers	4,500	325,000
Salinas	Plant and system additions	50,000	2,000,000
San Diego	Sewers, interceptors, plant	2,700,000	16,000,000
San Francisco	Plant addition, sewers	827,400	12,645,000
San Francisco Airport	Plant	5,000	372,000
San Jose	Plant	125,000	3,900,000
Sonora	Plant addition	2,448	.....
Stanton S. D	Sewers	5,000	190,000
Stege S. D	Plant enlargement	30,000	165,700
Stockton	Plant expansion	70,000	.....
Sunnyvale	Plant	10,000	1,50',000
Tracy	Plant addition (industrial)	8,440	.....
Union S. D	Trunk sewers, digester	50,000	410,000
Vallejo S. D	Plant, pump station	234,500	3,475,000
Watsonville	Sewer improvements	50,000	1,800,000

CONNECTICUT

In Connecticut, William S. Wise, Director of the State Water Commission reports that 10 sewage-treatment plants are planned for 1955. These will cost $3,750,000. In addition, sewer construction in seven municipalities will run somewhat over $2,600,000 during the same period.

DELAWARE

Although Donald K. Harmeston, Director of Sanitary Engineering for the Delaware State Board of Health, has no record of anticipated work for 1955, he does report work at the Wilmington plant and considerable sewer-extension work in New Castle County. The Dover plant also is currently under way and the preliminary plan for the Smyrna sewage works has been completed.

FLORIDA

Activity in the water supply and sewage works fields in Florida continues at a rather high level according to David B. Lee, Director of the State Board of Health's Bureau of Sanitary Engineering.

Sewage works planning rates a high priority among 16 Florida cities today. St. Petersburg has started work on the first unit of a master plant that will extend sewers to all parts of the city and see the erection of several sewage-treatment plants. Tampa is planning to extend its sewer lines to a large area recently annexed. The sewers will be connected to the existing modern sewage-treatment system. Work is now underway on the first unit of Coral Gables sewerage system, including the construction of a 25,000 population sewage-treatment plant.

New sewer systems and treatment plants are expected in the near future at the cities of Bradenton, Hollywood, West Palm Beach, Palm Beach, North Miami, Fort Pierce, Riviera Beach, and Lake Worth. Plans are well underway on several of these projects. Still in the planning stage are projects in Jacksonville and Miami Beach. Some extensions are being planned in Clearwater. Ocala anticipates improving its deteriorated sewer system which serves a modern sewage-treatment plant. The City of Sanford now has under construction a complete sewer system with treatment plant to be provided finally as part of the continuing construction program.

Aside from the healthy activity in municipal sewerage construction, Florida is undergoing a boom in sewerage systems and treatment plants for many subdivisions, several of which will serve 5,000 homes.

Regarding public water-supply activity in Florida, the following list shows some of the projects for which engineering plans and specifications have been approved by State Board of Health in the first half of 1954:

City	Project	Estimated Cost
Eau Gallie	Water main extensions	$ 18,000
Canaveral Harbor	Water supply and distribution	15,000
Lyons Park	Water main extensions	100,000
N. Andrews Terrace	Water distribution system	.....
Wilton Manors	Water main extension	70,000
Cape Haze Corp. (Placida)	New water supply system	95,000
Naples	New water treatment plant	350,000
Dixie Cup Manor	Water system extension	2,500
Mahta Island Key Biscayne	Water extension	20,000
Myrtle Grove	New water supply and treatment plant	17a,000
North Miami	Extension	48,300
Housing Authority of Miami	Water distribution system	75,000
Greenville Manor	Extension of mains	26,700
Tropical Highlands	Extensions	6,000
West Coral Way	New system	50,000
Flamingo Village	Extension	3,000
Tropical Highlands	Extensions	15,000
Miami Springs	Extensions	25,000
Mansionette Homes, Sec. 2	New water supply and distribution system	90,000
High Ridge Water Co. Plant No. 1	Extensions	39,500
Arcadia	New system	76,000

Naval Villa Park	Water distribution system	4,800
San Jose Shores	New water supply facilities	17,500
Highlands	Water distribution system extension	12,200
Lynnwood	New water pumping station	5,000
Arlington	Extension of water system	29,600
Sans Souci	Drilled and cased well	6,000
Brookview and Arlington East	Water distribution system extensions	7,000
Arlington Hills	New water supply facilities	72,000
Arlington Community Club	New 8-inch artesian well	7,000
Holly Oaken Forest S. D.	Additional water mains	12,000
Cedar Hills	New water mains and water plant	107,000
Highlands	Additional water supply facilities	17,900
Flagler Beach	Extension to the water distribution system	2,200
Jasper	Water main extensions	18,000
Marianna	Main extensions and new well	26,000
Greenville	New water supply system	5,900
Rural — Airport	Extension of distribution system	2,000
Southwood Village	Water distribution, only	10,000
Garden Heights	Main extensions	10,000
Ocala Highlands	Main extensions	58,900
Orlando	Alterations and extensions	97,000
Orlando Acres	New system	4,500
Sanlando Springs	New system	6,000
Orlando	New system	9,600
Riviera Beach	Extension	11,000
Clearwater	Additions to the water distribution system	73,718
Crescent City	Water main extensions	15,000
St. Augustine	Underwater crossing of Matanzas River	38,000
St. Augustine	New water supply system	200,000
Milton	Additional supply well	9,500
Casselberry	New system	10,000
Sanford	Alterations and extensions to existing system (pump, mains, elevated tank)	180,000
Casselberry	Extension	4,700
Branford	Water treatment and distribution system extension	75,000
Ormond Beach	Raw water supply line	20,000
New Smyrna Beach	Water main extensions	20,000

As has been the case with sewerage work, a good part of water-supply work in Florida is taking place in realty subdivisions outside of municipal corporate limits. Some of these developments include clarification and softening plants. Much of this may be considered indicative of the need for consolidated water districts or further extension of municipal systems.

GEORGIA

W. H. Weir, Director of Water Pollution Control for the Georgia Department of Public Health, has approved plans and specifications for the following major water and sewage works projects this year:

Water Supplies

City	Population	Type of Improvement
Augusta	72,000	Distribution system extensions
Barnsville	4,200	Raw-water impoundment, pumping station and supply line
Carrollton	8,000	Purification plant additions and improvements
Chatsworth	1,200	Elevated storage and distribution system extensions
Elberton	7,000	Purification plant additions and improvements
Ellijay	1,600	Raw-water pump station, new purification plant and distribution system additions
Fort Valley State College	....	Elevated tank and connections to distribution system
Gainesville	12,000	New water purification plant
Gracewood	8,000	New well and carbon dioxide removal plant
Griffin	14,600	Distribution system extensions and improvements
Glennville	2,400	Elevated storage and distribution system additions
Louisville	2,300	Elevated tanks, water mains
Lumber City	1,300	Distribution system extensions
Macon	70,000	Additional water supply mains
Milledgeville	9,000	New purification plant, elevated tank and distribution system improvements
Newnan	8,500	Raw water pump station and supply line to additional source of supply
Richmond County	....	Carbon dioxide removal plant, elevated storage and distribution system additions
Savannah State College	....	Elevated tank and connections to distribution system
Sparta	2,000	Raw-water pump station, water purification plant and distribution system additions
Suwanee	800	New water works
Tifton	2,200	Distribution system extensions
Temple	800	Distribution system extensions
Warner Robins	8,000	Elevated storage, carbon dioxide removal plant and distribution system extensions; deep well
Waycross	20,000	Deep well

Sewage Works

Augusta	72,000	Sewer system additions
Goodyear Clearwater	....	Mills, sewers and primary treatment plant
Atlanta	332,000	Additions and improvements to R. M. Clayton and South River sewage-treatment plants
Cairo	5,600	Sewers, pump station and treatment plant additions
Cleveland	800	Outfall and primary treatment plant
DeKalb County	....	Sewers and pump stations
Glennville	2,400	Sewers, pump stations, and complete treatment plant
Lumber City	1,300	New sewer system
Marietta	21,600	Outfall sewer and complete treatment plant
Rome, subdivision	....	Sewers and outfall to city sewer system
Savannah	120,000	Sewers and pump stations
Warner Robins	8,000	Sewers and complete treatment plant

IDAHO

Five cities in this state are preparing for new sewage-treatment works according to H. C. Clare, Director of the Public Health Department's Environmental Sanitation Payette (population 4,000) is holding a bond election to finance the construction of sewer extensions and a sewage-treatment plant. Challis (population 700) will also hold a bond election in the near future for the same reason. Lewiston Orchards (population 5,000), Arco (population 1,000), and Hailey (population 1,500) are planning sewer and sewage-treatment plant construction, but plans are now in a preliminary stage and no bond election date has been set.

ILLINOIS

Sewage work is extremely active in Illinois, according to C. W. Klassen, Technical Secretary of the Sanitary Water Board. Work currently under consideration runs as follows:

City	Population	Type of Improvement
Forreston	1,100	Treatment works additions, report being considered
Poplar Grove	800	Treatment works additions, report being considered
Chemung (Milk Co.)	....	Treatment works additions, report being considered
Moline, East Moline, Silvis	55,000	Plans being developed for sanitary district
Crete	2,300	Report
Washington Park Jockey Club	....	Report
Flossmore	2,000	Report
Glenwood	800	Report
Homewood	800	Report
La Grange Coronet Village	....	Report
Lemont	3,000	Report
Lombard	10,000	Report
Minooka	800	Report
Naperville	7,000	Report
Northbrook	3,300	Report
Tinley Park	2,400	Report
Wheeling	800	Report
Lansing	8,600	Report
Bourbonnair	1,600	Report
Earlville	1,300	Report
Gardner	800	Report
Lake Villa	800	Report
LaSalle	12,000	Report
Monteno	2,000	Report
St. Charles (industrial waste)	....	Report
Toulon	1,100	Sewage-treatment additions, survey
Mt. Sterling	2,500	Sewage-treatment additions, survey
Augusta	800	Sewers and treatment plant, survey
Peoria (Expositions Gardens)	....	Sewers and treatment plant, survey
Stronghurst	800	Sewers and treatment plant, survey
Springfield Sanitary District	....	Survey
Farmer City	1,800	Survey

City	Population	Plans in Preparation
Shannon	800	Sewers and treatment works
Hampshire	800	Sewers and treatment works
Mt. Morris	3,000	Additional treatment works
Rockton	1,500	Revision of sewer system and treatment works
Lena	1,300	Cheese factory pretreatment
Freeport	23,000	Sewage treatment additions
Fulton	2,800	Sewage improvements

Plans also prepared for Bloom Townships Sanitary District; Elmhurst, 22,000; Steger, 4,400; Chicago Farm Colony; Downers Grove Sanitary District; Lake Forest Deerpath School; Lockport, 5,000; North Shore Sanitary District; Will County School District No. 96, Joliet; Bradley, 6,000; Minonk, 2,000; Oglesby, 4,000; Sheridan, 800; Tonica, dairy waste; Woodstock, industrial waste for chromium removal; W. Kankakee, battery waste; Camp Point, 1,000; Roseville, 1,100; Elmwood, 1,730, sewers and treatment plant; Carbondale, 11,000, treatment plant improvements and sewer extensions.

INDIANA

In the Hoosier state, 12 municipalities are expected to place new sewage-treatment plants or plant extensions under contract within the next year. The total amount of this work according to Blucher A. Poole, Director of the Board of Health's Bureau of Environmental Sanitation, will run to $22,790,000. Most of the work includes intercepting sewers. The list runs as follows:

City	1950 Population	Cost
Brownsburg	1,578	$ 425,000
Connersville	15,550	3,900,000
Elkhart	35,646	2,600,000
Evansville (West)	128,636	4,800,000
Frankfort	15,028	1,065,000
Kokomo	38,672	1,250,000
La Porte	17,882	1,000,000
Michigan City	28,395	800,000
Rochester	4,673	575,000
Scottsboro	2,953	160,000
Terre Haute	64,214	5,750,000
West Lafayette	11,873	325,000

In addition, 40 other Indiana cities have had final plans and specifications approved for sewage-treatment plants.

IOWA

Some of the larger Iowa cities currently are giving serious consideration to the construction of more sewers and treatment facilities, P. J. Houser of the State Department of Health reports. Four of these cities, with a total population of 115,000, are situated on the Mississippi River, and one, with a population of 85,000, is on the Missouri. Fifteen other cities are building or will start construction shortly of sewage-treatment plants. Des Moines recently awarded a contract for a $1,000,000 sewage-treatment plant enlargement.

KANSAS

Mr. Gordon Mau, of the Kansas State Board of Health, reports that at least eight cities will start construction of sewage-treatment plants before the end of 1954. These include Almena (600), Beloit (4,000), primary treatment only; Great Bend, 15,200; Lawrence (19,900), primary treatment only; Manhattan (14,200), primary treatment only; Marysville (4,200), primary treatment; Osborne, (2,000), Peabody, (1,400.)

Twenty-one other cities and sewer districts have plants or plant enlargements currently under construction. Of these, three are building new sewer systems. In addition, 13 cities have completed plants or plant enlargements, of which five include newer sewer systems.

Augusta (population 5,650) has completed a new surface-water treating plant; Salina (29,100) is building a new well-water softening plant; Wichita (192,200) is enlarging its softening plant.

MARYLAND

In Maryland, probably five sewage-treatment plants will be under construction in the future and eight or 10 larger sewer extensions. The treatment plants will serve towns having populations of less than 5,000, according to George L. Hall, Chief of Sanitary Engineering for the Maryland Department of Health.

(*Continued on page* 171)

JUNEAU, ALASKA

By WILLIAM S. FOSTER
Engineering Editor
THE AMERICAN CITY

Alaska's City of Stability

Alaska Series, III

JUNEAU, Alaska's capital city, is without doubt the territory's most extensively developed municipality. The population in the city and environs numbers about 9,000, and about 6,500 within the city proper. It is a city with an aura of stability. Its growth through the years, has been slow and steady; its many trim, thrifty homes attest to a settlement of people who are making the territory their permanent home.

In addition to serving as the territorial capital, Juneau has fishing, canning, and lumbering interests, and is the home of Alaska's first plywood industry. The city also sits on the fringe of the proposed Taiya aluminum project.

This embryonic giant hydroelectric power development proposes to divert certain headwaters of the Yukon so that instead of flowing 2,100 miles to the Bering Sea, the waters will be channeled by tunnel through the Coast Range to produce electric power.

Hardheaded engineering studies estimate that the fall of these waters will generate 800,000 kw of power, enough to produce 400,000 tons of aluminum per year. What will be the ultimate effect of this development on Juneau's growth cannot be readily prophesied, but that it will leave its mark on the city is undisputed. At present, the project is delayed only by negotiations for Canadian water rights.

Juneau has not awaited these prospective booms, however. The city's expansion has been mature and constructive. It now has a higher percentage of paved streets within the city limits than any other city in the territory. Of the 19 miles of streets, 91% are paved, 25% with concrete.

Streets and Transportation

As in Ketchikan, Juneau's streets are narrow and wind up the side of the mountains, supported in many places by timber trestles. But unlike Ketchikan, soil conditions permit many trestles to be replaced with more sturdy concrete crib walls that are backfilled with earth and rock and are less costly to maintain.

The city also benefits from a fine, self-supporting airport, Navy-built and CAA-operated until recently. Now it is Juneau's responsibility entirely. The 6,500-foot runways currently serve large, modern commercial planes. The city also maintains self-supporting municipal port facilities, but it has no outside highway connection.

The city has a well-equipped street department that includes among its equipment an Austin-Western 10-ton roller, a Caterpillar grader, several International dump trucks, one of which is equipped with a Pitman Hydra-Lift crane. It owns a TL-10 Tractomotive bucket loader, a little Wilshire power sweeper, a Worthington air compressor, a Lincoln welder that sees duty as a pipe thawer as well as an emergency repair unit, and a shop-made street flusher. A Kelly-Kresswell paint striper marks traffic lanes.

The city expects 4 or 5 feet of snowfall per year and 115 inches of rainfall. To clear away the snow, the street department uses a Caterpillar grader for windrowing and an Athey loader for pickups. The trucks are equipped with Frink plows for snow re-

Juneau's Mayor Bert McDowell enjoys the use of a municipal building as modern and functional as any in the United States.

moval. At the airport, the city keeps two Klauer Sno-Go's and two blade plows to handle snow-removal problems.

The most distinctive feature of Juneau's stability is its handling of finances. Recently, the city acquired the water works from a private company and increased water revenue 23% simply by reviewing water-customer accounts. Since the water works is unmetered and no accurate records of connections to mains were available, the city resorted to a comparison of water services with tax cards. Many accounts were uncovered that had been receiving water without charge for many years.

The lack of meters on the system produces phenomenal water-use figures. City Engineer Crow estimates that daily use averages 500 to 600 gallons per capita. Rates are nominal. The average family pays $2.50 per month; apartment dwellings, $2.00 per unit; and miners' cabins, now virtually obsolete, $1.50.

Water is drawn from mountain springs. Supply is sufficient and requires no pumping or treatment other than the chlorination provided by Wallace & Tiernan chlorinators. Most of the distribution system is cast-iron pipe, although in the remote hilly areas some of the lines are wood stave. The system supplies water at pressures varying somewhere between 70 and 90 pounds per square inch.

Taxes and Revenue

Tax collection also was put on a paying basis recently. The city had been awarding tax-collection duties to contractors who annually spent six weeks doing an indifferent job. However, the city now employs a full-time tax collector who is also assigned to the assessment of property. He has already reassessed much of the property in the municipality, correcting inequities, and has succeeded in making collection work more efficient and profitable to the city.

The city's revenue depends upon an ad valorem tax and a sales tax of 2%. Half the sales tax defrays the cost of retiring school district bonds, and the balance provides funds required to match federal grants received from the Alaska Public Works program. The program embraces street construction, water and sewerage, and school and public building construction of all kinds.

With this improved tax-collection system, the city is able to reduce its costs by using short-term notes instead of longer-term bonds for financing. The assurance that the payments will be made more promptly encourages this improved service.

Municipal Assets

Juneau has a new city hall, which houses all fire, police, and other city departments. In its new jail, built to meet modern standards, prisoners are segregated by types of offense, and rehabilitation is attempted. Minor offenders are permitted to work on city property and thereby reduce their sentences; one day of work represents two days of confinement.

The police department boasts a two-way Kaar radio, a chief, five patrolmen, and two jail guards. The two-way radio has hookups with the civil defense network and territorial police.

The fire department is set up on a volunteer basis, but has two men on permanent duty. Fire equipment consists of four FWD pumpers varying from 250 to 750 gpm, and one smaller unit supplied by the civil defense program which answers fire calls outside the city. The city also maintains a public ambulance service; the ambulance was purchased through a public fund drive.

Juneau has at least one dramatic problem. Like Ketchikan, the city sits on the panhandle coast of Alaska with its back against the mountains. One portion of this mountainside towers over part of the city, presenting a constant threat of snowslides. Occasionally, in the spring of the year, the sun thaws the ground enough to send a slide of rock, timber, and snow down the mountain to wipe out one or two homes.

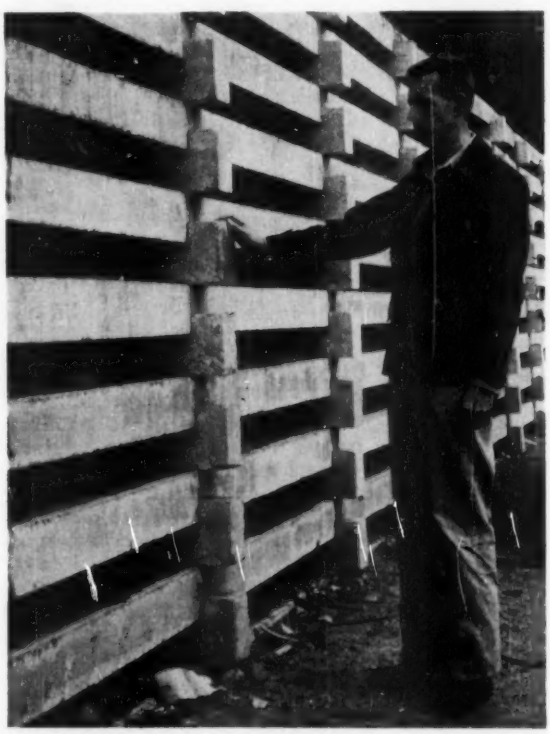
Danger Signal

Mayor Bert F. McDowell and City Engineer Crow have made plans to zone this portion of the city, prohibiting further home construction and condemning the houses that now sit beneath this Damocles sword. No one has yet been injured by these slides since the mountain streams give warnings of danger. When the water runs clear, the homes are safe; when they turn muddy, the danger signal has been sounded.

The city is expanding its water supply system by building two new wood stave standpipes in the nearby mountainside. It has initiated a long-range planning program that embraces off-street parking facilities only a short distance from the business district.

The city licenses two private refuse-collection companies to gather refuse from residences at a cost of $1.50 per month. The city maintains the dumping area and conducts a continuous rat-extermination program.

About ready for adoption by the city is a zoning ordinance that will govern all large buildings, and provide sites for parks and schools. The city is now adopting the Pacific Coast Building Code as a standard for all future construction.



Contrete crib retaining walls support many of Juneau's streets.

What Cuts Traffic Congestion and Accidents?

When the Institute of Traffic Engineers cited 21 cities in June 1954 for outstanding achievement in traffic engineering during 1953, this magazine asked the Traffic Engineers of these cities to tell what they thought were the winning measures in their cities.

The opinions of 15 of these traffic specialists are noted in the following three pages.

DETROIT, MICH.—

First in 1,000,000 and Over Class

CURRENTLY we are working on the construction of north-south and east-west expressways to provide for the free and rapid movement of through traffic. The portions already in use have given considerable relief to adjacent surface streets. This lessening of congestion on surface streets has contributed substantially to traffic safety in Detroit.

Approximately 800 of the city's 1,100 traffic signals have been modernized with respect to better visibility and timing, thus adding to the effectiveness of the signal system. This modernization program also provides for the orderly and progressive movement of heavy volumes of traffic during peak periods.

Last year Detroit conducted one of the most extensive street-painting programs in its history. All major arteries were either laned or centerlined twice during the year. In addition, most secondary streets were centerlined. This program has paid valuable dividends in the form of a safer and more orderly flow of traffic. Crosswalks were painted at intersections where there were heavy volumes of both pedestrian and vehicular traffic and about 800 school crosswalks were also painted. The value of this cross-walk program is reflected in the reduced number of pedestrian fatalities for the past year.

A replacement program whereby signs indicating parking restrictions or other traffic regulations, as well as street-name signs, are replaced every four years makes for better observance of regulations and provides for easy identification of streets.

The revenue derived from the 6,795 parking meters is used for the development of off-street parking facilities. Installation of these meters provides for equitable distribution of curb-parking space where the demand for short-term parking is high.

In addition to being clearly marked, the 78.6 miles of one way streets in Detroit are also well lighted. Street lighting is up to the I. E. S. standards on 545 miles of streets, 45 miles of which were added during the last year.

ALGER F. MALO, *Director*
Department of Streets and Traffic

CLEVELAND, OHIO—

First in 750,000 to 1,000,000 Class

NOT only circumferential highways but radial expressways relieve local streets of through traffic in Cleveland. Providing commuter and longtime parking facilities outside the business district removes the congestion element of traffic and eliminates cruising for a place to park. Where these lots are distant from the business or shopping district, transit service must be established between the lots and the city center.

Better timing of traffic signals and progressive signal operation have facilitated and speeded traffic. Improvements include pedestrian signals and red indications of 2-3 seconds after yellow in order to reduce angle and pedestrian conflicts. More and more center and lane lines are being laid down because of their effectiveness. Parking meters, by reducing enforcement man power, have released men for other traffic duty.

Complete replacement of Cleveland's street lights to I.E.S. Standards makes these traffic measures and devices equally potent at night.

V. L. JOHNSON
City Traffic Engineer

PITTSBURGH, PA.—

Tied for First in 500,000 to 750,000 Class

PLANS are being completed for a highway loop around the downtown business district of Pittsburgh, Pa., and an extensive highway-construction program will provide a limited access highway extending from the eastern border of the city to the western border. This highway, known as the Penn-Lincoln Parkway, will run adjacent to the downtown business district and will be part of the loop around that area.

The demand for short-time parking has been more urgent than the demand for long-time parking. Two garages have been completed for the short-time parker. An underground garage is under construction at Mellon Square. Two additional garages will be started within the very near future, and tentative plans are underway for several other garages.

City Council has appropriated $60,000 for improvement of the downtown traffic-signal system. Seventeen new traffic-signal installations were made in 1953.

Fifty miles of streets were added in 1953 for regular maintenance of center and lane lines. Eight hundred traffic signs were added in addition to the signs required for extensive revisions in parking regulations. The construction program alone required 1,000 temporary traffic signs. No parking meters were added, although funds have been appropriated for the installation of 1,000 more meters.

MICHAEL J. GITTENS
Traffic Engineer

DENVER, COLO.—

First in 350,000 to 500,000 Class

FACTORS that helped our record are Denver's two best-known innovations: the separate pedestrian walk period and the central traffic-control system, which computes traffic volumes and regulates the timing of the traffic signals on that basis. A three-year plan will bring all the 548 traffic signals in Denver under the influence of additional master controllers or convert them to vehicle-actuated controllers. Neon walk lights were added at 35 intersections. A major factor has been a progressive education program informing the public of what we are doing and why we are doing it.

Of our total of 32,552 traffic signs, 2,154 were installed in 1953. Other statistics are 30 channelized intersections, 5,981 parking meters, and 209.25 miles of modern street lighting. City-wide, 1953 showed an 18% drop in nighttime accidents. Typical mercury-vapor lighting consists of 15,000-lumen lamps on 12-foot brackets every 176 feet staggered.

During 1953, although vehicle registrations increased 4%, total accidents decreased 2.1% and fatalities 38.3%.

JACK W. SHOCKEY
Associate Traffic Engineer

KANSAS CITY, MO.—

Tied for Second in 350,000 to 500,000 Class

The most important factors in the control of Kansas City traffic are the traffic signals, signs, and pavement markings. An important effort has been the elimination of bottlenecks by channelization. Good street lighting is a major factor in a good record.

THOMAS J. SEBURN
Director of Traffic Department

LOUISVILLE, KY.—

Tied for Second in 350,000 to 500,000 Class

INSTEAD of a loop around the business district, Louisville has a series of one-way streets through the business district. These one-way streets and unbalanced flow streets connect the business district with population centers. Short-time parking is handled at 2,000 parking meters. All our traffic signals are interconnected or traffic-actuated. Our street-lighting system is now being modernized.

Our entire traffic-control program recognizes two classes of streets, on which speed limits differ, in Louisville: major and residential. We have No Stopping and No Parking signs on over 100 miles of our major street system.

WILBERT F. WATKINS, *Director*
Department of Traffic Engineering

RICHMOND, VA.—

First in 200,000 to 350,00 Class

OUR position in this weighing of traffic accomplishments can be explained by five factors which I shall name in order. We have installed many more "Yield" signs, and these replaced numerous unnecessary "Stop" signs.

Our traffic-signal system has been revised in detail on the basis of factual data. New mercury-vapor lamps have contributed materially to the better situation. Inspection and regular maintenance of all signs, including those permitted contractors during street construction has helped. In the field of parking, our 1,000 meters have been so helpful that 200 more have been ordered.

JOHN T. HANNA
City Traffic Engineer

PROVIDENCE, R. I.—

Tied for Second in 200,000 to 350,000 Class

PROVIDENCE was awarded third place in its population group for its all-around traffic-safety program (National Safety Council), second place for its traffic-engineering program, and an outstanding achievement award for accident facts. It was awarded first place in its population group in the AAA National Pedestrian Protection Contest.

While traffic-control devices—signals, signs, meters, lighting—are important, the larger factors in our success are police enforcement, public education, and a cooperative community spirit.

ROGER T. CHANDLER
Traffic Engineer

PHOENIX, ARIZ.—

First in 100,000 to 200,000 Class

EXTENSIVE changes in our traffic-signal system were a contributing factor in our winning first place in traffic engineering. A full progressive quartercycle off-set was established in the downtown area. Care was taken to maintain progressive timing at all signals. Our signal modernization program required at least two and in most cases three signal heads for each direction of travel at an intersection.

Money was provided to maintain clear and distinct traffic markings. Left-turn channels were established. No Parking areas used extensively to improve traffic movement, especially in peak hours. A one-way street system was established. Modern street lighting was installed throughout the downtown area and on major traffic arterials.

CHARLES E. HALEY
Traffic Engineer

CHARLOTTE, N. C.—

Second in 100,000 to 200,000 Class

THREE general improvements account for our favorable position in the urban traffic picture. Nine miles of streets in the business district have been made one-way. Peak-hour restrictions increase the number of lanes into and out of the business district; these lanes are clearly marked to facilitate observance. Fast flow through continuous movement is achieved by a 68-intersection interconnected two-block alternate flexible progressive signal system, using a program drum for setting up changes of time cycle and dials in accordance with the traffic demand at different times of day.

H. J. HOOSE
Traffic Engineer

FRESNO, CALIF.—

First in 50,000 to 100,000 Class

A FREEWAY is being constructed to bypass main highway traffic around the business district of Fresno. A system of one-way streets to carry secondary highway traffic is being installed around the perimeter of the business district. However, neither of these is yet in effect.

Nineteen intersections were signalized in 1953. All these intersections were in synchronized systems which provided intersection control as well as speed control between intersections. Additional phases were provided for heavy left-turn movements and special pedestrian signals were installed at certain locations. Modern mercury-vapor illumination was installed at channelized intersections and on streets which had a bad night-accident record.

All arterial streets are centered and lane-lined with reflective paint; 240 crosswalks were painted, doubling those in the previous year. Approximately 600 traffic signs were installed or replaced. We have 1,750 parking meters at the curb and 250 meters are in operation on city-owned off-street lots.

After the city had constructed two off-street metered parking lots (capacity 260 cars) all angle parking in the central business district was eliminated. This had the effect of widening the streets for an extra lane in each direction.

The City of Fresno installed "yield right-of-way" signs at 25 intersections at which the accident record was abnormal but where stop signs were not warranted. An active Safety Council was organized and obtained excellent public support.

A. Lynn Stewart
City Traffic Engineer

EVANSTON, ILL.—

Second in 50,000 to 100,000 Class

EVANSTON now possesses those two fundamentals of efficient traffic control: a loop around the business district and commuter and long-time parking lots outside the congested district. We have 21 parking lots with 739 meters in 12 of these lots. In addition, there are 1,314 street meters. Our street lighting is good, as is our enforcement program.

Z. A. Faulkner
City Traffic Engineer

WAUSAU, WIS.—

First in 25,000 to 50,000 Class

THE streamlining of Wausau's streets included elimination of parking on congested streets. We also made some through streets in order to remove through traffic from the business district. Good traffic engineering is demonstrated in a community by the flow of traffic on its streets. As more and more automobiles are put on the highway, the problem is to keep cars moving through and within the city. Travel is aided at night by a new mercury-vapor street-lighting system.

In the National Contest, Wausau was rated top in engineering and won the Grand Award of the National Safety Council, naming Wausau the Safest City in the United States.

Everett Gleason
Chief of Police

WILMETTE, ILL.—

Tied for Second in 10,000 to 25,000 Class

COMMUTER parking lots are provided adjacent to, but outside, the business district and within easy walking distance. Revenue from parking meters is devoted to this purpose. Modern traffic signals have replaced the old two-corner signals at three installations. Walk signals have been installed at two locations.

One-way traffic and restricted parking is employed to handle football crowds in season and to handle beach traffic in summer.

Edwin F. Whiteside
Chief of Police

TWO RIVERS, WIS.—

Tied for Second in 10,000 to 25,000 Class

ONE-WAY traffic has been set up in streets one block off the main business streets in an effort to develop a loop around the business district. The main business street has been widened for its entire length. The next objective—and the engineering work is completed—is a through truck route off the main business area. City Council has approved a six-year capital program.

Two no-limit off-street parking lots have been established in industrial areas adjacent to the business district. Their purpose is to relieve parking pressure in the business district caused by industrial workers and the employees of commercial establishments.

Doubling the number of traffic signals and using peak system control operations only, made it possible to design the control to fit the traffic flow. Similarly, study of conditions at each intersection has resulted in the installation of the correct signs. Incidentally, a new street-name sign has been erected at every intersection.

We have concluded the first year of parking meters. By earmarking all revenues for off-street parking, it has been possible to acquire, pave, and light off-street lots with 425 car spaces. Also just concluded is the first year of a 3-year program of relighting every mile of roadway in the city.

Edward F. Pazdera
Police Chief

State Building Code Gains Municipal Acceptance

THE New York State Building Construction Code—an optional state-wide regulation aimed at eliminating conflicting controls that tend to increase building costs or retard the use of new materials—is gaining acceptance in the nation's most populated state. Recently, the City of Peekskill (population over 18,000) became the 135th municipality in the state to accept the code since the establishment of the first portion applying to one- and two-family dwellings in November 1951. The code is now in force in 16 cities, 44 towns, and 75 villages, having an aggregate population of over 1,000,000 persons.

Since the promulgation of the first parts of the code in 1951, a section on multiple dwellings has been added. Portions covering commercial, industrial, institutional and other nonresidential building are in preparation.

Modern Water Rates

PART VI

ABILENE, KANS.

Rates Per Quarter *†

Volume of Water (in cubic feet)	*Metered Charges* (per 100 cubic feet) In City	Outside City
First 2,000	$0.28	$0.36
Next 2,000	.22	.27
" 3,000	.17	.20
" 8,000	.12	.12
" 25,000	.10	.10
" 25,000	.09	.09
" 35,000	.08	.08
" 650,000	.07	.07
Excess	By contract	

* Minimum charge for water is $3.00 per quarter

† Penalty for late payment is $1.00.

General Data

Population served 6,000
Services (100% metered) 2,200
Hydrants 145
Miles of mains 35
Supply—wells
Treatment—chlorination
Storage facilities—750,000 gallons in elevated tanks
Average demand ..... 0.9 mgd
Plant capacity ..... 3.0 mgd

Typical Costs Per Quarter

Gallons	*Cubic Feet*	*Costs*
5,000	1,200	$3.36
15,000	2,000	5.60
30,000	4,000	10.00

Remarks

1. City makes no special charge for fire protection.
2. Other municipal departments and churches receive water free.
3. Water funds have been diverted to other municipal uses in the past, but they no longer are.
4. Meters formerly were owned by the water user; the city is now taking possession of them. Meters are placed in a meter box at the lot line.
5. Current water rates have been in effect since July 1952 and represent a 20% rise over previous rates established in 1923.

H. W. Callahan
Superintendent of Utilities

INDEPENDENCE, ORE.

Rate Regulations

1. Commercial costs are based on the first 10,000 cubic feet of water which is rated at 13 cents per 100 cubic feet. All in excess is rated at 10 cents per 100 cubic feet.
2. The residential rate is computed monthly at 15 cents per 100 cubic feet of water used.
3. During the irrigation season, all water used in excess of 1,000 cubic feet per month, from May to September, is considered as being used for irrigation purposes and is billed at 8 cents per 100 cubic feet.
4. Public fire protection is provided at the rate of $24 per hydrant per year.

General Data

Population served 2,000
Services (100% metered) 700
Hydrants 65
Miles of mains 23
Supply—wells
Storage facilities— 50,000 gallons in elevated tanks
380,000 gallons in covered reservoirs
Average demand ..... 0.25 mgd
Plant capacity ..... 1.50 mgd

Typical Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$0.60
5,000	667	1.05
10,000	1,333	2.10

Remarks

1. Water company owns all meters; places them in a meter box at the lot line.
2. Rates have remained unchanged for several years.

W. J. Darling, *District Manager*
Mountain States Power Company

ELOY, ARIZ.

Minimum Charges

(for first 4,000 gallons)

Size of Meter (in inches)	*Charge*
¾	$ 3.00
1	5.00
1½	8.00
2	12.00
3	25.00

Volume of Water (in gallons)	*Metered Rates* (per 1,000 gallons)
First 6,000	$0.30
Next 15,000	.25
Excess	.18

General Data

Population served 5,000
Services (100% metered) 1,027
Hydrants 2
Valves 2
Miles of mains 20
Supply—two wells
Treatment—none
Storage facilities—50,000 gallons in elevated tank
Average demand ..... 4 mgd
Plant capacity ..... 1.4 mgd

Typical Costs Per Month

(¾-inch meter)

Gallons	*Cubic Feet*	*Costs*
3,000	400	$3.00
5,000	667	3.30
10,000	1,333	4.80

Remarks

1. City makes no charges for public or private fire protection.
2. No restrictions imposed on use of water for lawn sprinkling or air conditioning.
3. Meters are the property of the water department; are placed in a meter box at the lot line.
4. Bills are prepared on a Burroughs automatic billing machine.
5. Rates have remained unchanged for many years.

H. C. Jones
Water Superintendent

GLENDALE, CALIF.

Rates Per Month

Size of Meter (in inches)	*Minimum Charges* In City	Outside City
⅝, ¾, 1	$1.00	$2.00
1½	1.50	3.00
2	2.00	4.00
3	3.00	6.00
4	4.00	8.00
6	6.00	12.00
8	8.00	16.00

Volume of Water (in cubic feet)	*Metered Charges* (per 100 cubic feet)	
First 10,000	$0.17	$0.30
Next 40,000	.145	.275
" 50,000	.12	.25
" 100,000	.09	.22
" 100,000	.08	.21
Excess	.065	.195

Fire-Protection Service

	Charges Per Month
Public per hydrant	$2.00
Private 2-inch line	1.00
3 " "	1.50
4 " "	2.00
6 " "	4.00
8 " "	5.00

General Data

Population served 111,000
Services (100% metered) 26,415
Hydrants 1,614
Valves 3,604
Miles of mains 284
Supply—local wells: summertime supplements from Metropolitan District
Storage facilities—covered reservoirs, 180,000,000 gallons
Average demand ..... 19.7 mgd
Plant capacity ..... 35 mgd

Typical Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	401	$1.00
5,000	668	1.14
10,000	1,337	2.27

Remarks

1. Rates have risen 24% in the last five years.
2. City sends bills bimonthly, but computes them by applying the rates prescribed in the ordinance to one-half the water used during the two-month periods and multiplying the results by two.
3. Water Department owns the meters; places them in a box at the curb line.
4. Department distributes no water free, and charges other city departments at the regular rate.
5. Usually 12% of the gross water income is diverted to the general fund.
6. Bills are prepared on a Burroughs automatic billing machine.

Harold E. Butler
Water Engineer

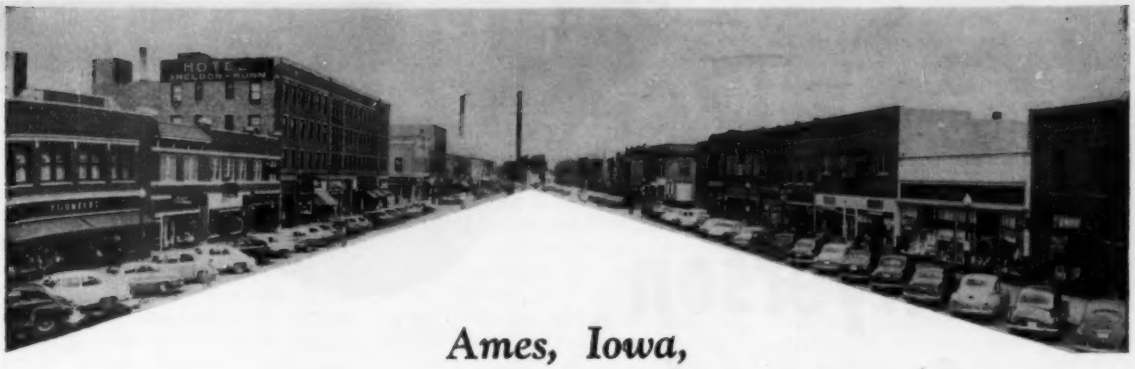
REDWOOD, CALIF.

Rates Bimonthly

Size of Meter (in inches)	*Minimum Charges* Inside City	Outside City
¾	$ 3.60	$ 5.00
¾	4.80	6.30
1	6.60	8.40
1½	12.00	13.90
2	18.00	22.40
3	34.80	42.60
4	57.60	67.20
6	103.20	127.70

Volume of Water (in cubic feet)	*Metered Charges* (per 100 cubic feet)	
First 6,600	$ 0.33	$ 0.45
Next 60,000	.27	.40
" 600,000	.24	.35
Excess	.22	.35

(*Continued on page 161*)



Ames, Iowa,

Gives A New Twist To Council-Manager Government

By **JOSEPH P. LAWLER**
Mayor
President, General Filter Company

AS mayor of the "Amiable City of Ames" I can take no credit for the establishment of our particular form of city government . . . it existed before I was old enough to be immediately concerned with civic problems. However, the more I have associated myself with city administration the more aware I have become of the wisdom our fathers exercised in introducing our present form of council-manager government.

Our plan deviates to some extent from the original and generally accepted form, but basically it follows the formula laid down to resolve the apparent conflict between democracy and efficiency. It preserves the principles of democracy through the popular election of a council, and provides efficient administration through the appointment of a trained, professional administrator.

The Ames version was adopted by a city ordinance in 1920. The citizens of Ames elect 12 city officials by ballot: a mayor; six councilmen, one from each of four wards and two at large; a judge and clerk of municipal court; and three Park Board members.

The most startling departure from the "popular plan" is the placement of the police department under the direct jurisdiction of the mayor. It is the contention of the Ames Council that police protection and correction is a matter of humanities and not a function of business administration.

Without the responsibility for the police department, the city manager is not so vulnerable to outside criticism that has no bearing on municipal economics . . . it protects him from political pressure and lets him concentrate all of his time and efforts to municipal administration. The mayor is charged with the responsibility of the over-all management of the police department, with the chief of police as the administrative officer.

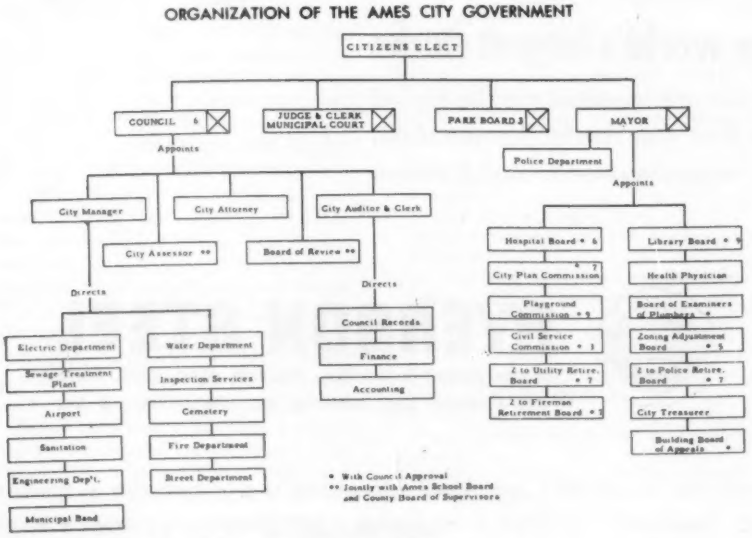
The main duties of the mayor, aside from his duties as official representative of the city, are the appointment of members to the committees of the council and to the various boards and commissions and the appointment of the city health physician and city treasurer. He serves as chairman of the board of health, has charge of the police department, and signs bonds, contracts, ordinances, and resolutions as adopted or approved by the council.

The Council

The City Council is the legislative branch of the city government and as such is the policy-determining body. The council adopts the annual budget, which determines the tax levy and appropriates the available fund for the functions of government as defined by law. The council passes ordinances and awards all contracts.

It is the duty of the council to ap-

ORGANIZATION OF THE AMES CITY GOVERNMENT



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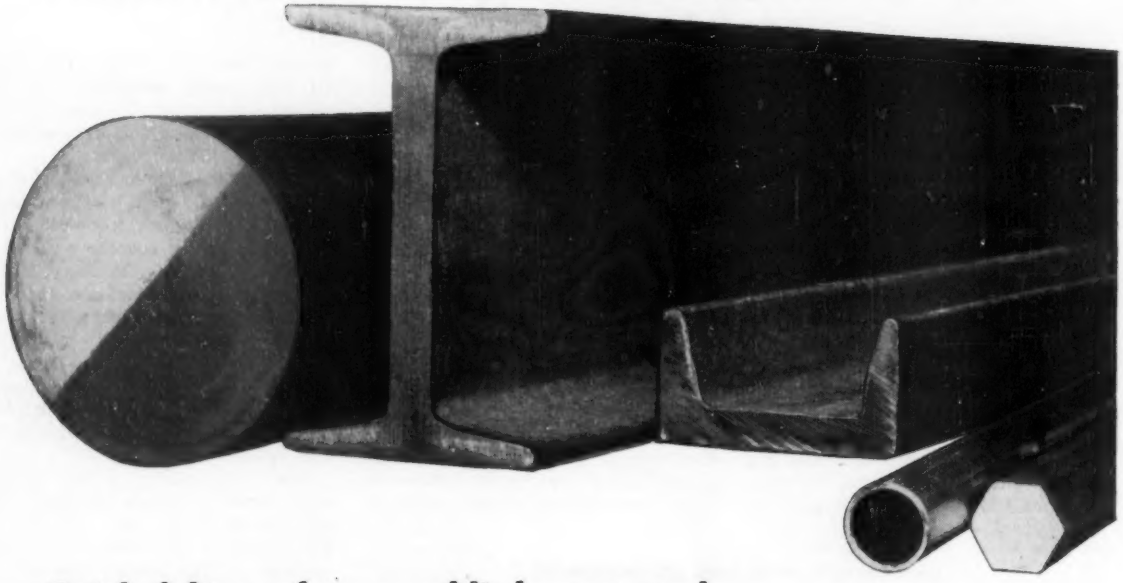

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point and fix the salaries of the city manager, auditor and clerk, and solicitor. Appointments to all boards and commissions require council approval.

City Manager

The manager is, of course, the central figure of the plan. He is by ordinance, vested with the duties and powers of management and control of the departments, utilities, and commissions of the city. He is the city's chief administrative officer, bringing matters requiring council action to their attention and carrying out the policies as determined by the council. He is responsible to the City Council for the proper administration of the city affairs placed in his charge.

His Duties

The duties performed by the manager in the departments under his supervision include personnel, financial, and inspection responsibilities. Regular monthly reports come from the department heads to the city manager. From these financial and operation reports, the manager can establish cost and operation studies for the various activities of the several departments.

Many problems presented to the council by citizens and others are referred to the city manager for study and recommendation. Such studies and recommendations often require detailed investigations and the collection of necessary data to form the basis for further consideration and action by the council. When such reports are presented to and acted upon by the council, it then becomes the manager's duty to see that their decisions are effectively carried out.

The city manager is given the exclusive authority and responsibility in the departments under his charge of employing and discharging the employees, fixing their compensation and working conditions, all subject to civil service requirements.

Before hiring, applicants are referred to the Civil Service Commission for examination in accordance with the requirements of the position for which application is made. The Commission then approves or disapproves the applicant. The manager and department heads select the applicant from the list of those approved by the Commission.

Many permanent records such as property ownership, plats of additions and subdivisions in the city, zoning, permits and operating reports on various departments are available for public use in the manager's office.

Another staff function under the manager is that of purchasing equipment and supplies for the operation of all departments over which he has jurisdiction. The purchasing agent maintains contact with suppliers in order to be acquainted with products and prices. Requisitions for materials and supplies are approved by the manager and the purchase order issued by the purchasing agent. Bids are taken on quantity purchases of materials and supplies.

The manager's office is a central clearing house for many inquiries concerning municipal operation and for general information concerning municipal affairs. When such inquiries require action by some specific department, they are referred to the appropriate department head for prompt attention. In addition, the city's several independent boards and commissions as well as various organizations call upon this office for information and advice concerning municipal problems.

The inspection services under the direction of the city manager include related activities which aid in safeguarding health, welfare and public safety. These services were recently brought under closer relation by the adoption of a complete building code.

City Auditor and Clerk

The city auditor and clerk is appointed by the City Council and is charged with the duties of serving as clerk of the council. He is the city's chief finance officer and custodian of city records.

The auditor and the manager are on an equal basis and work closely together, coordinating all matters of revenue and expenditure. As the city manager is selected for his professional training in administration, so the city auditor is chosen for his professional training in finance and business accounting.

As finance officer the auditor receives and disburses all funds of the city as directed by the city council. The clerk's office bills and collects revenue of the city and performs the accounting for all departments and boards in the city government.

Each month the office processes all payrolls, all utility accounts on the water and electric meters in service, and bills and collects charges and fees of all other city departments.

The auditor and clerk issue bonds for indebtedness for public improvements as directed by the council. Bills are paid twice monthly and since the inception of the city manager plan, the city has never defaulted on a bond or general obligation. Consequently Ames enjoys a good reputation with bond houses. The plan has worked so smoothly and efficiently that the city gets a lower interest rate on their bonds.

The Ames plan has existed for nearly a quarter of a century . . . and has conclusively demonstrated that with the cooperation of its citizens and leaders alike, efficiency in city administration can be maintained and at the same time the principles and theory of democracy can be upheld.

New Federal Acts Aid Cities

THE U. S. Conference of Mayors, in its September 1 *Municipal News*, lists seven actions taken by the 1954 session of Congress as of special interest to cities:

1. An expanded Federal-Aid Highway Program
2. A new Housing, Slum Clearance, Urban Development, and Urban Renewal Program *
3. An expanded Social Security Program under which city employees, on a voluntary basis, may obtain coverage under the Old Age and Survivors' Insurance System
4. Expansion of the Federal-Aid Hospital Construction Program
5. A token appropriation of 22 millions for reactivation of a limited Federal Airport-Aid Construction Program
6. A token appropriation for Federal Civil Defense Activities
7. Extension of the work of the Federal Commission on Intergovernmental Relations.

Details concerning all of the above have been transmitted by the Conference to its member cities. Additional copies of reports on each of the programs mentioned are available upon request of officials of member cities.

It may also be mentioned that the ever-recurring proposal to subject certain types of municipal bonds to federal taxation was again given some consideration, but efforts along this line were disapproved by the Congress.

* See THE AMERICAN CITY for September 1954 (pages 120-121).

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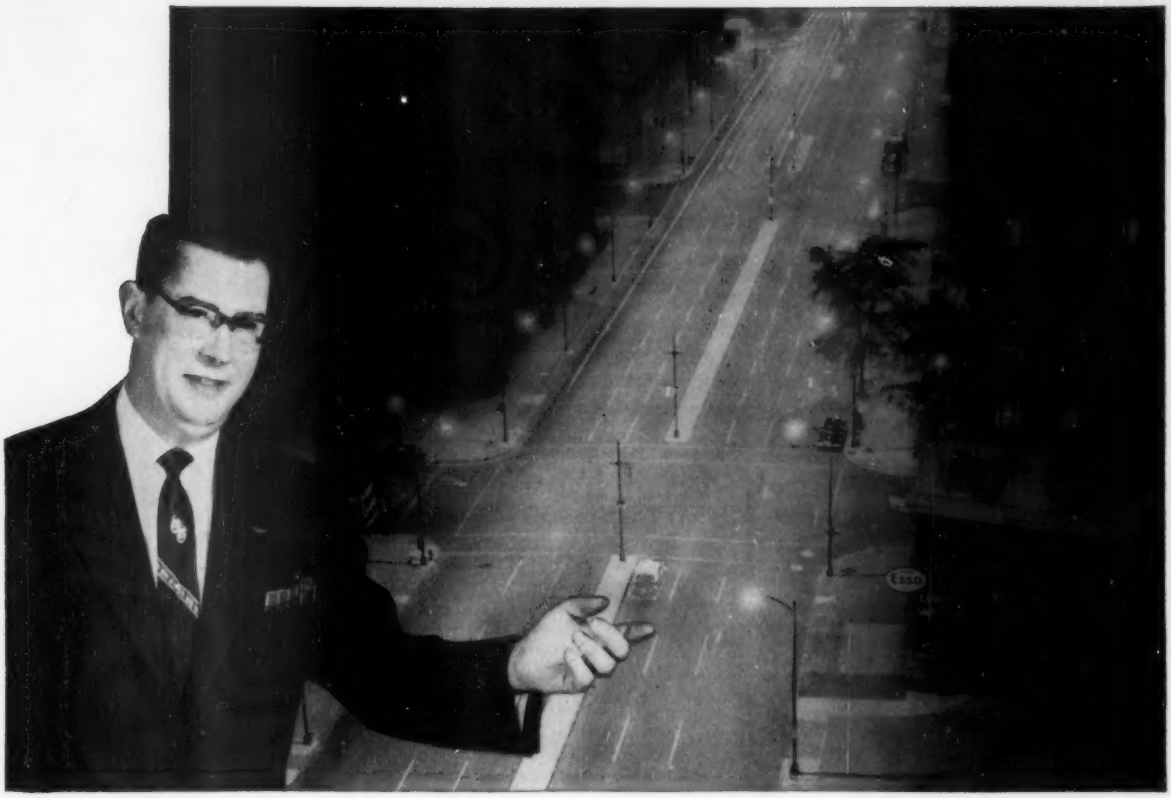


In working with utilities and municipal authorities for the past 20 years, Ed Karns, Westinghouse Street Lighting Sales Manager, has accumulated detailed economic studies for specific installations and conditions.

Look beyond initial cost when selecting street lighting equipment

Initial cost of street lighting equipment represents only a fraction of the *actual* investment. Power consumption and maintenance costs are extremely important factors to consider when investigating the long-range economics of a street lighting system.

Today, more than ever before, maintenance costs should be a prime consideration! These costs have increased tremendously to the point where many city officials are demanding sturdy equipment that will withstand the rigors of years of outdoor use—and yet are easy to relamp and clean.

The next few pages show how Westinghouse Street Lighting Engineers have built timesaving maintenance features into Westinghouse incandescent and mercury vapor equipment.

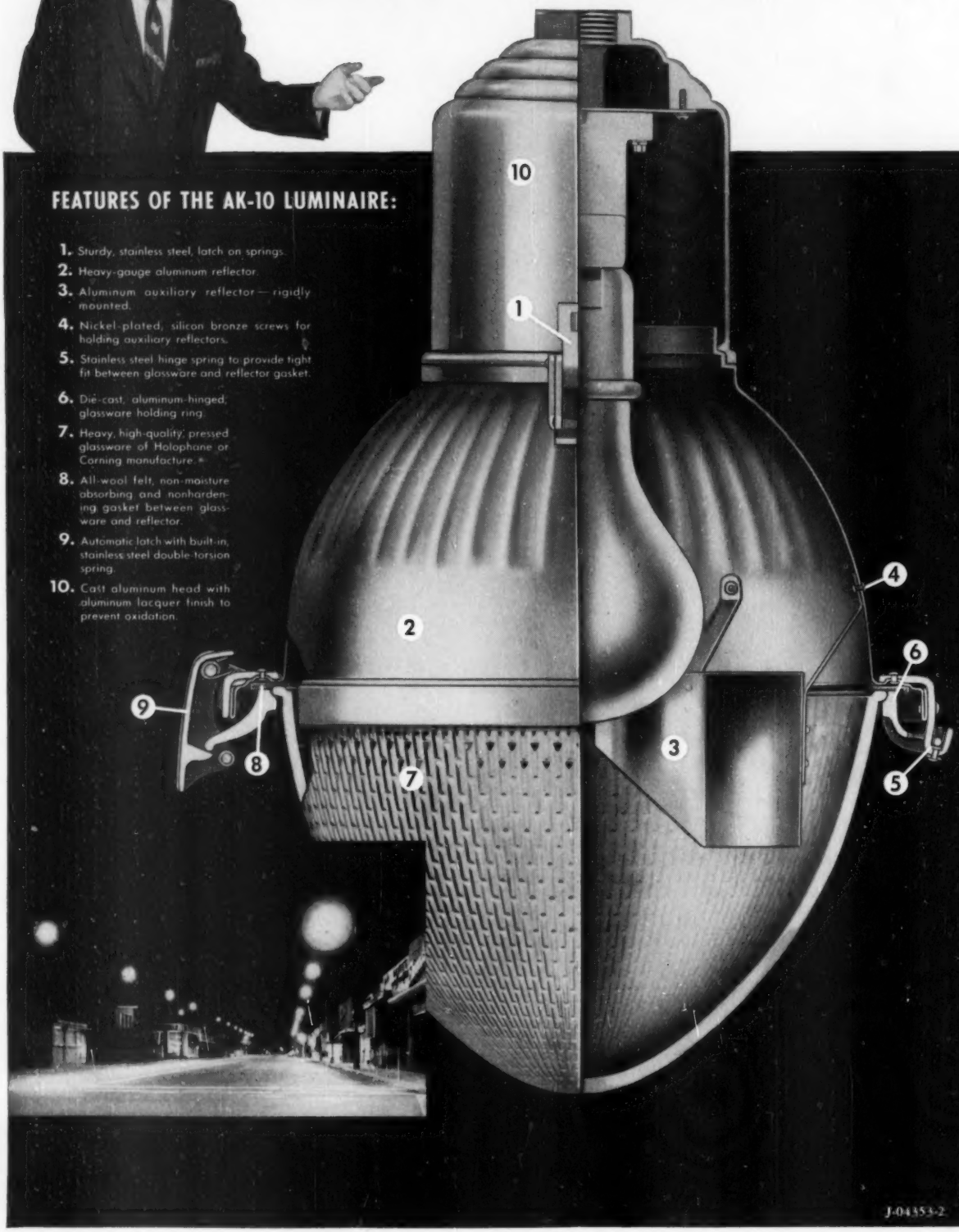
J-04353-1

YOU CAN BE SURE...IF IT'S Westinghouse

Look first at mechanical construction and maintenance advantages—for long-term economy.

FEATURES OF THE AK-10 LUMINAIRE:

1. Sturdy, stainless steel, latch on springs.
2. Heavy-gauge aluminum reflector.
3. Aluminum auxiliary reflector—rigidly mounted.
4. Nickel-plated, silicon bronze screws for holding auxiliary reflectors.
5. Stainless steel hinge spring to provide tight fit between glassware and reflector gasket.
6. Die-cast, aluminum-hinged, glassware holding ring.
7. Heavy, high-quality, pressed glassware of Holophane or Corning manufacture.*
8. All-wool felt, non-moisture absorbing and nonhardening gasket between glassware and reflector.
9. Automatic latch with built-in, stainless steel double-torsion spring.
10. Cast aluminum head with aluminum lacquer finish to prevent oxidation.



Westinghouse maintenance features speed routine cleaning and relamping

• ON INCANDESCENT EQUIPMENT

Westinghouse Luminaires using lamps from 1000 lumen to 15,000 lumen meet all EEI-NEMA standards for electrical and mechanical construction and IES and ASA standards for light distribution. They are available for top or side mounting, inner or outer wiring, high or low voltage, series or multiple circuits.

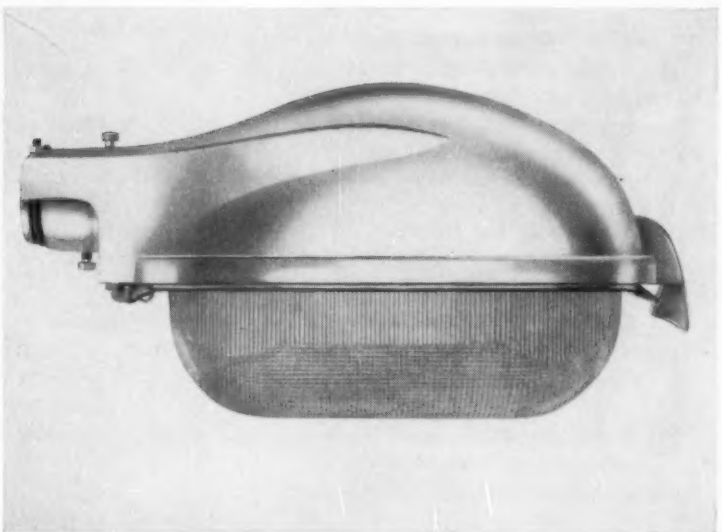
- Westinghouse AK-10's physical size and reflector design control the operating temperature of the lamp. The larger the optical system, the lower the operating temperature—thus, less lamp blackening and better lumen maintenance. And AK-10 has approximately 22% more radiating surface than most competitive luminaires.
- Improved hinge, hanger and automatic latch, with constant spring action, maintain a tight fit between glassware and gasket—to keep out dirt and bugs. Cleaning and relamping operation is easily performed with one hand.

• ON MERCURY VAPOR EQUIPMENT

OV-20 and OV-60 luminaires accommodate mercury vapor lamps from 11,000 to 52,000 lumen. Westinghouse Mercury Vapor Lamps have an average rated life of 6000 hours of street lighting service.

- Easy relamping—all the maintenance man does is release automatic latch and globe swings free, allowing him to replace the lamp quickly and easily with one hand.
- Easy cleaning—Westinghouse OV-20 and OV-60 Luminaires are completely gasketed making the unit weatherproof and impervious to insect and dirt collection. Glass is detachable from reflector —enabling cleaning with chemicals without fear of damaging reflector.

J-04353-3



OV-20 uses 11,000 lumen CH-5, 15,000 lumen AH-1, 20,000 lumen EH-1 and 19,000 lumen JH-1 mercury lamps. Type II, III and IV distribution.

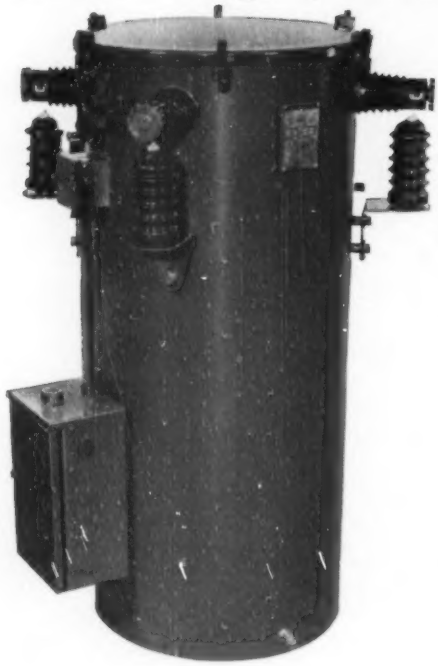
OV-60 uses 35,000 lumen AH-18, 33,000 lumen BH-18, 52,000 lumen AH-15 and 49,000 lumen BH-15 mercury lamps. Type IV distribution.

Compare the complete Westinghouse Street Lighting Package and the CSP-H constant current regulator discussed on the next page.

YOU CAN BE **SURE**...IF IT'S **Westinghouse**

Another economic consideration:

Westinghouse CSP-H Constant Current Regulators insure long, efficient operation



The Westinghouse CSP-H Constant Current Regulators are designed so that they supply flat secondary current regulation over a wide variation in primary voltage.

The smaller size and lighter weight make them easier to handle and require less pole space.

These units are filled with oil at the factory and then vacuum treated to remove all trapped air. All current adjustments are made before they leave the factory—no need for adjustments in the field. And all moving parts are under oil—which means no change in weight of parts during operation.

Investigate these quality features found in Westinghouse CSP-H Constant Current Regulators:

(1) Core and coil are spring mounted to minimize noise.

(2) Moving coil is held by Micarta® supports which will not absorb oil, and are clamped to prevent coils from working loose.

(3) Grain-oriented Hipersil® steel is used in the core for greater efficiency and lighter weight.

(4) Cascading is possible with this unit.

(5) Coastal finish on the tank provides protection even in corrosive atmosphere.

Ask your nearest Westinghouse Representative for the complete street lighting story. J-04353-4

YOU CAN BE SURE...IF IT'S Westinghouse

Street Lighting For Pedestrians and for Vehicles

By W. B. ELMER
Manager Street Lighting Department
Wheeler Reflector Company, Boston, Mass.

STREET lighting has two basic functions:

1. to enable pedestrians to move safely at night.
2. to enable drivers to operate motor vehicles safely at night.

Since the earliest days of street lighting, the first application, pedestrian safety, has been the more important. In recent years, the second application, traffic safety lighting, though also of great importance, has been exploited commercially by some manufacturers to the point where pedestrian lighting has been well nigh ignored.

Pedestrian lighting is obtained by illumination of vertical surfaces by widely spaced luminaires, while traffic lighting is accomplished only by much higher lighting intensities, measured in units of horizontal illumination.

Pedestrian lighting falls into three generally used categories:

1. Beacon lighting
2. Guidance lighting
3. Pedestrian safety lighting

Beacon lighting is provided by small luminaires at isolated locations on country roads, and is effective only in indicating the general direction of the roadway. Although beacon lighting has definite value, the horizontal illumination and local visibility are generally so slight as to be negligible.

Guidance lighting is provided by small luminaires of 600 to 1,000 lumens on spacings of 300 to 500 feet. This is the type of street lighting that has predominated in the United States until very recently.

Minimum ***Pedestrian Safety lighting*** is provided by 2,500-lumen luminaires spaced 300 to 500 feet apart. The minimum vertical illumination under these conditions is in the neighborhood of .01 foot-candle, and characterized by normal color and detail perception at a low intensity necessary to safe and normal visual environments.

Traffic Safety lighting is provided by average horizontal foot-candle intensities of 0.6 foot-candles and over. Lower intensities down to 0.2 foot-candles are acceptable and economical where the combination of wheel and foot traffic is exceptionally light. No traffic lighting can be considered safe below 0.2 foot-candles horizontal average. The American Standard Practice for Street and Highway Lighting gives detailed information on the design of traffic safety lighting installations but omits recommendations for pedestrian safety lighting. It is hoped that this omission will be remedied in future revisions of the code.

Although nearly half of the installed street lights in the United States are lamps of 1,000-lumens and less, this is an uneconomical size, and no new installations of lamps smaller than 2,500 lumens are recommended.

For all rural and light residential areas, where pedestrian safety lighting is required, and motor traffic is a negligible factor, 2,500-lumen lamps on 300-350 foot spacing (every 3 line poles) are recommended generally as the minimum. Lamps of 4,000 lumens would be preferable in most instances. The common, although unwarranted, tendency to use expensive enclosed luminaires whenever 4,000-lumen lamps are applied, is an unfortunate deterrent to the use of this lamp size.

Mid-Block Lighting

Many cities and towns have inherited the ineffective practice of lighting their residential streets entirely from the street intersections where blocks are 400 to 600 feet long, or longer. This practice results in wholly inadequate sidewalk lighting in the mid-points of the blocks.

The fact that the overhead distribution lines are often located in the back-lot lines militates against the installation of much-needed mid-block lighting, which would require setting new wood poles and running line extensions (often expensive underground extensions for appearance sake) from the rear-lot pole. Nevertheless, it is becoming increasingly urgent, in the interest of pedestrian safety, for the municipal engineers to face this problem and inaugurate programs for the installation of mid-block street lights.

Many companies, even some of the large and responsible utilities, have historically attempted to ameliorate this condition by installing excessively large lamps—6,000 or even 10,000 lumens—at the intersections, hoping that enough lumens would stray down their long, dark blocks to give heart to benighted travelers.

To women and children who are obliged to use these streets at night, the terrors of walking past dark hedges and large tree trunks are too well known to require further description, and the darkness and dangers of these mid-block danger zones are emphasized by the contrast of the single glaring light at the distant intersection.

Now that many municipalities have completed fine high intensity lighting installations in the main down-

POLICE RADAR DROPS DEATH TOLL

POLICE RADAR CREDITED WITH DROP IN DEATHS
Radar, a wartime developed detection device, has been aimed at highway
ENFORCEMENT OFFICIALS CREDIT
ELECTRO-MATIC®
RADAR SPEED METER
WITH CUTTING HIGHWAY
DEATH TOLL

REPORTS IN FROM 29 STATES

Most of the 29 states using Electro-Matic Radar Speed Meter say it's cutting down accidents. The latest state to install it and the state which pioneered radar's use in patrolling highways are equally enthusiastic about the results, an Associated Press survey found.

Virginia State Police, one of the first users of radar, in an expanded program credit radar for the reduction in the death toll on the Fourth of July weekend. There were only 7 deaths this year compared to 21 last year.

Radar Speed Meters have been used for a year by the

Kansas highway patrol. They note a 12 per cent reduction in traffic fatalities and conservatively say radar "may have played some part."

Mississippi State Police credit radar with a 77 per cent reduction in traffic accidents.

HOW THE SPEED METER WORKS

Continuous speed measurements of vehicles approaching or receding in the path of a radar beam are taken directly with the Model S-2 Speed Meter. Speed readings are plainly and directly indicated in miles per hour, day or night and under all weather conditions, on the illuminated meter scale or on the chart of the auxiliary Graphic Recorder.

Readings of speeds up to 100 mph are accurate within 2 mph. The Speed Meter can be set up and operating in less than three minutes on either car battery or 120 volt A.C. power. A single ON - OFF switch is the only control necessary for operation.

Either one-man or two-man usage of the S-2 Speed Meter is practical. Under the one-man system the Transmitter -

Receiver Unit is connected by a small cable to the Indicator Unit at the point down the road where the officer is stationed. Departments that favor two-man usage utilize two cars, the first car mounts the Radar Speed Meter and is in radio-telephone communication with the intercepting car at a suitable location down the road.

MANY ADVANTAGES OFFERED

1. Police can check far more vehicles than with a cruiser car.
2. Hazards to pursuing officers and motorists are eliminated.
3. It is effective day and night and in all weather.
4. Psychological deterrent to would-be speeders.
5. Portable for spot checking.
6. Ideal for investigating complaints of neighborhood speeding.
7. Either one-man or two-man usage of the Speed Meter can be employed.

For full details write for Bulletin R-102 to

AUTOMATIC SIGNAL
DIVISION
EASTERN INDUSTRIES, INCORPORATED
NORWALK • CONNECTICUT

town shopping centers, they are finding it more important to turn their attention to the even more important task of providing proper pedestrian safety lighting throughout their residential streets.

Where the new downtown or white-way lighting is of the blue-green mercury type, it is advantageous to use the smaller 100-watt, 3,300-lumen companion-type mercury lamps in open luminaires to provide acceptable approach lighting of compatible color and suitable intensity. The amazingly long actual life of these medium-base lamps (about 15,000 hours average actual life contrasted to their unrealistic 1,000-hour official rating), plus their high efficiency, make these lamps economical despite their higher first cost.

The availability of a lamp which can be group-replaced on schedules as long as 2½ to 3 years gives the utility maintenance group a wonderful new tool for reducing lighting costs.

In applying luminaires for residential lighting, the utilization curves supplied by the manufacturers should be used to compute the *sidewalk illumination*. To most street-lighting engineers, who are accustomed to using these curves for calculating pavement illumination, it comes as somewhat of a surprise to realize that these same curves can be easily used to determine sidewalk illumination, in the same way that they are now used for street illumination.

When conventional sidewalk illumination problems are worked out in this way, it is discovered that Type II luminaires, mounted on short 4- or 6-foot arms, while inadequate for street illumination, are *far inferior* to Type I luminaires on mast arms mounted over the center of the street. This latter construction provides equal illumination for the sidewalks on both sides of the street, whereas Type II lighting gives a surplus light, plus excessive nonuniformity to the near sidewalk and skimps seriously the light on the far sidewalk.

The fact that residential streets are usually also heavily treed streets, gives another powerful reason for using Type I luminaires on long mast arms. And the fact that very excellent, yet inexpensive, *open type* Type I luminaires are available for use with 600 to 4,000-lumen lamps makes it possible to follow this new trend without the penalty of using expensive and undesirable glass-enclosed luminaires for this purpose.

For all locations where motor vehicle traffic is an appreciable factor, the I.E.S. Street and Highway Lighting Code should be consulted for selection of lamp size, luminaire distribution characteristics, mounting height, spacing and arrangement.

For all locations where motor-vehicle traffic is an appreciable factor, the I.E.S. Street and Highway Lighting Code should be consulted for selection of lamp size, luminaire distribution characteristics, mounting height, spacing and arrangement.

The following suggested light center elevations embody the I.E.S. Code recommendations and are supplemented where these specifications are incomplete.

Mounting Heights—Feet

Lamp Size (Lumens)	Distribution Type			
	Type I	Type II	Type III	Type IV and V
600- 1,000	20-22	18-20	...	18
2,500	22-25	20-22	20	20
4,000- 6,000	25	25	25	22-25
10,000	..	30*	30*	30
15,000-25,000	..	30	30*	30*

*Slightly lower mounting permitted where luminaire background brightness is appreciable.

By using the side-mounted type of luminaire with upsweep brackets, the light can generally be raised from one to two additional feet without changing the point of pole attachment. Other advantages of side mounting are that water is less likely to run into the luminaire from the pipe support, and rust and foreign matter from the pipe interior are less likely to drop on the live metal parts within the luminaire and entrance cables are more easily protected from heat.

The rated voltage of a series lighting circuit is the open-circuit voltage of the constant-current transformer, if it does not have automatic open-circuit protective equipment, and is the rated full-load voltage if such protective equipment is used.

The cost of protective equipment is sometimes more than saved by making possible the use of luminaires of lower voltage ratings than could be safely used without such equipment.

If large constant-current transformers (with suitable protective equipment) are connected for dual circuit operation by dividing the dual secondaries into two separate interconnected circuits, the rated voltage of the two circuits is halved as compared with single circuit operation.

If the rated circuit voltage exceeds 2,500 volts, the street head must be insulated with wet-process porcelain to provide sufficient safety for the men who work on the poles carrying the lighting equipment. Both porcelain and metal heads are available for all high-voltage series circuits up to 10,500 volts.

For series lamps of 2,500 lumens and less, a low-voltage metal canopy with dry-process porcelain series receptacle is available at a saving in first cost. For large, enclosed lamps, 6,000 lumens and over, where the small metal canopy would not provide adequate cooling surface to dissipate the heat from the lamp, the same large metal head that is used on high-voltage series circuits is also available with the low-voltage dry-process series receptacle, positioned to give the correct light center.

Although it is occasionally done, it is not considered good lighting practice to install lamps of 6,000 lumens and over in open reflectors because of the optical shock produced by the bare filament. It is likewise unnecessary and undesirable to install lamps of 2,500 lumens and less in enclosing glassware. Also, 4,000-lumen lamps give very satisfactory performance in open reflectors and the cost of enclosing glassware can well be saved for this lamp size.

In areas where smoke and dirt accumulate on the luminaires, enclosures are preferred to maintain lumen output. In rural areas where the atmosphere is uncontaminated and the luminaires remain clean, the addition of enclosing glassware merely introduces an additional loss of light output, in addition to increased first cost and maintenance cost.

Choice of Lamps

The lamp size for any given location where traffic safety is the main consideration should generally be based on the latest "American Standard Practice of Street and Highway Lighting" prepared and issued by the Illuminating Engineering Society, 1860 Broadway, New York, N. Y., at a charge of 50 cents per copy.

(*Continued on page 143*)

HERE'S REAL *Versatility* IN OUTDOOR LIGHTING CONTROL

THE FISHER-PIERCE
SERIES 64400 PHOTOELECTRIC CONTROL

This control embodies the proven, dependable F-P basic circuit, in a simple, compact form. Mounting versatility of this unitized control is represented in the adaptions to various manufacturers' luminaires illustrated here, as well as ballast, pole top, cross arm, standard and other mountings.

Versatility of the Series 64400 Control is equalled by its economy. Low initial cost, savings in wiring, labor and materials, as well as low maintenance cost, make it economically practical to use one F-P 64400 Control per lamp.

Complete Descriptive Data on Request

THE FISHER-PIERCE CO.
94 Pearl Street, So. Braintree, Boston 85, Mass.

EXPORT: PHILLIPS EXPORT CORP.
DIVISION OF NORTH AMERICAN PHILLIPS
100 E. 42ND STREET
NEW YORK 17, N. Y.

IN CANADA:
NORTHERN ELECTRIC
CO., Ltd.

(*Continued from page 141*)

The I.E.S. classified traffic intensity is as follows:

Vehicular Volume (Maximum Night Hour)	Traffic Classification
Under 500	Light Traffic
500-1,200	Medium Traffic
1,200 up	Heavy Traffic

Recommended Average Horizontal Footcandles (lumens per Square Foot) for Urban Streets are as follows:

Pedestrian Traffic	Vehicular Traffic Light	Medium	Heavy
Heavy	0.8	1.0	1.2
Medium	0.6	0.8	1.0
Light	0.2 to 0.4	0.6	0.8

Below are a few typical luminaire arrangements to obtain specified footcandle values:

Foot Candles	Street Width	Lamp Lumens	Approximate Spacing	Type Distribution
0.2	30′	2,500	165 ft. staggered	I.S.E. Type II
	40′	4,000	200 ft. staggered	I.E.S. Type II or III
0.4	30′	6,000	110 ft. staggered	I.E.S. Type IV
0.6	60′	10,000	113 ft. staggered	I.E.S. Type IV
1.0	60′	10,000	70 ft. staggered	I.E.S. Type IV
	80′	10,000	110 ft. opposite	I.E.S. Type IV

For light residential and rural areas where traffic safety lighting is not required, minimum pedestrian safety can normally be obtained by installing 2,500 lumen lamps in modern Type II or Type I luminaires on 300 to 350 foot spacings.

Fluorescent Lights at 20 Degrees Below Zero

TEN MONTHS AGO the Central Main Power Company installed some 20 General Electric fluorescent fixtures in Auburn, Maine, and found them to be one of the most satisfying jobs we ever did. This type of fixture provides the most comfortable seeing conditions from a driver's viewpoint.

The long luminaire with its aluminum reflector is free from blinding effect. Its abundance of light in a wide pattern approaches the ideal, we think, as do many car drivers who have praised the installation. Besides being comfortable, fluorescent lighting creates an attractive and distinctive atmosphere for the downtown business area. The City of Auburn has been the talk of the state.

Only a few years ago an objection to fluorescent street lights was the start of difficulties encountered at low temperatures. Here is an installation in Auburn, Maine, which sustains temperatures of 20° below zero and performs excellently.

From an operating standpoint, we have not touched one lamp now for over 3,300 burning hours. As last winter approached, we wondered how our fluorescent lighting would operate in cold weather. But at 20° below zero the lamp performed perfectly. We recommend them to *any* city that wants the best in whiteway lighting.

R. B. McFarland, *Director*
Lighting Division
Central Maine Power Company
Augusta, Maine

Poor Street Lighting Creates a Real Emergency

MOST states have laws limiting the bonded indebtedness or the size of the general operating fund (or both) of cities and municipalities within the state. Ohio law, for instance, prohibits the general fund of the city from rising above "10 mills on the tax duplicate" (a 10-mill tax rate on the total assessed valuation of the city). Municipal officials are concerned, therefore, with preserving the general fund for current operating expenses and look for other means of financing needed improvements in the municipality.

Ohio further permits special assessments to be made for municipal improvements required to alleviate an emergency condition. Inadequate street lighting has been declared a dangerous condition involving an emergency state. Street lighting, therefore, can be installed under this statute with direct assessment on the property owners abutting the streets to be lighted.

An ordinance is passed by the municipality declaring an emergency and levying an assessment for street lighting to eliminate the dangerous condition. This ordinance takes the form similar to the one recently advertised for the City of University Heights, Ohio, as stated in the form at the end of this article.

Assessments for complete street lighting in the various municipalities in the Cleveland area run between 12 and 17 cents per foot. This method explains the many street-lighting modernization programs going on in the Cleveland area, and is increasingly popular with cities throughout Ohio. Municipal officials in other states please copy.

Legal notice, ordinance No. 54-59 by Mr. Atkins

. . . being an ordinance levying special assessment for the improvement of various streets in the City of University Heights, Ohio, by supplying them with electrical street lighting and declaring an emergency.

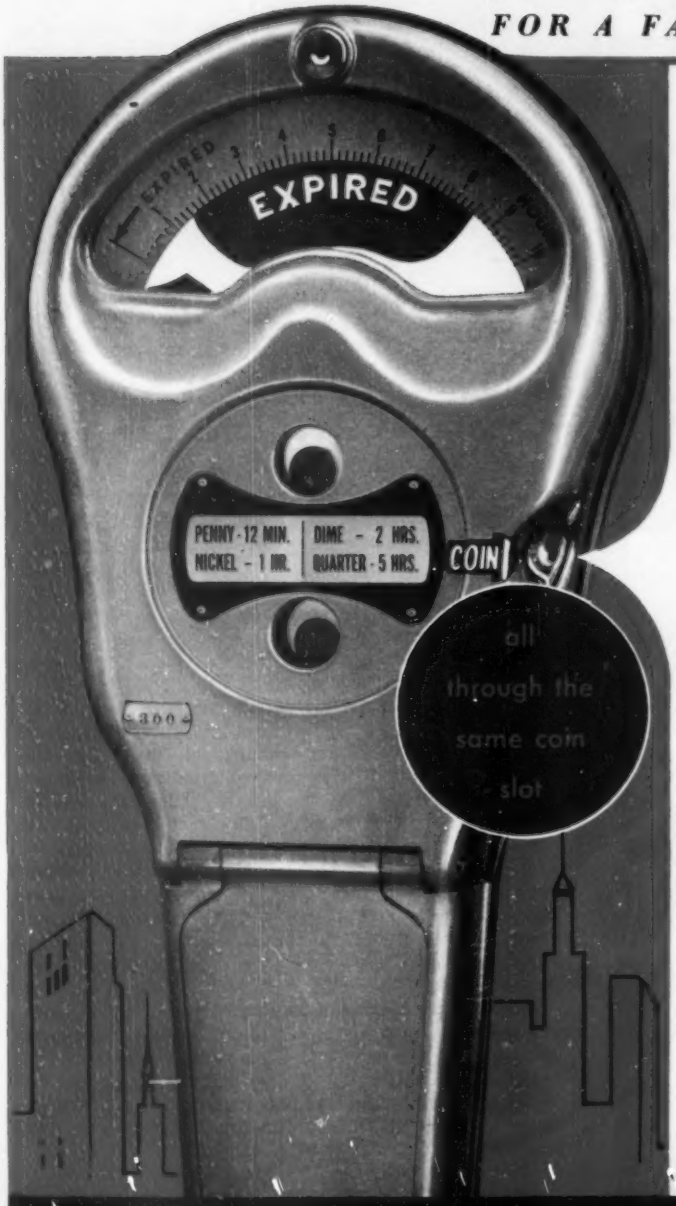
BE IT ORDAINED by the Council of the City of University Heights, Ohio, five members elected thereto concurring:

Section 1. This Council having heretofore declared the necessity of improving streets within the City of University Heights, Ohio, by supplying the same with electric lighting hereby finds the actual cost of said

(*Continued on page 147*)

PARK-O-METERS

the finest parking-meter
FOR A FAST-GROWING CITY



1c — 5c — 10c — 25c

SHORT LIMITS
on street and off-street lots

LONG LIMITS
on fringe area streets and off-street lots

ANY LIMIT
6 minutes to 24 hours

AUTOMATIC • SIMPLE • POSITIVE

nothing equals Park-O-Meter in flexibility, reliability, quality and convenience.

Tell us your city's problem
WE CAN HELP YOU. NO OBLIGATION

Magee-Hale
PARK-O-METER COMPANY
OKLAHOMA CITY 2, OKLAHOMA

Created by the originators of Metered Parking

Find out why

PRESTRESSED CONCRETE HY-LITES

mean unmatched economy and durability

Write today for American Concrete Catalog No. 300

IF you are responsible for planning, specifying or purchasing street lighting standards . . . you will want a copy of American Concrete Corporation's helpful Catalog No. 300 on Hy-Lite Prestressed Concrete Lighting Standards.

This new 24-page booklet gives you complete information on attractive Hy-Lite designs, foundation and mounting arrangements, engineering data, specifications, dimensions, and details on today's greatest advancement in reinforced concrete construction . . . *prestressing.*

In this catalog you will also find a photo-story on the making of Hy-Lites, as well as numerous pictures of typical Hy-Lite installations. Four pages are devoted to a complete description of upright standards for special lighting applications.

To get your free copy, simply fill-in and mail the handy coupon, or write to The American Concrete Corporation, 5092 North Kimberly Avenue, Chicago 30, Illinois.

American Concrete
PRESTRESSED CONCRETE LIGHTING STANDARDS

American Concrete Corporation
5092 North Kimberly Avenue
Chicago 30, Illinois

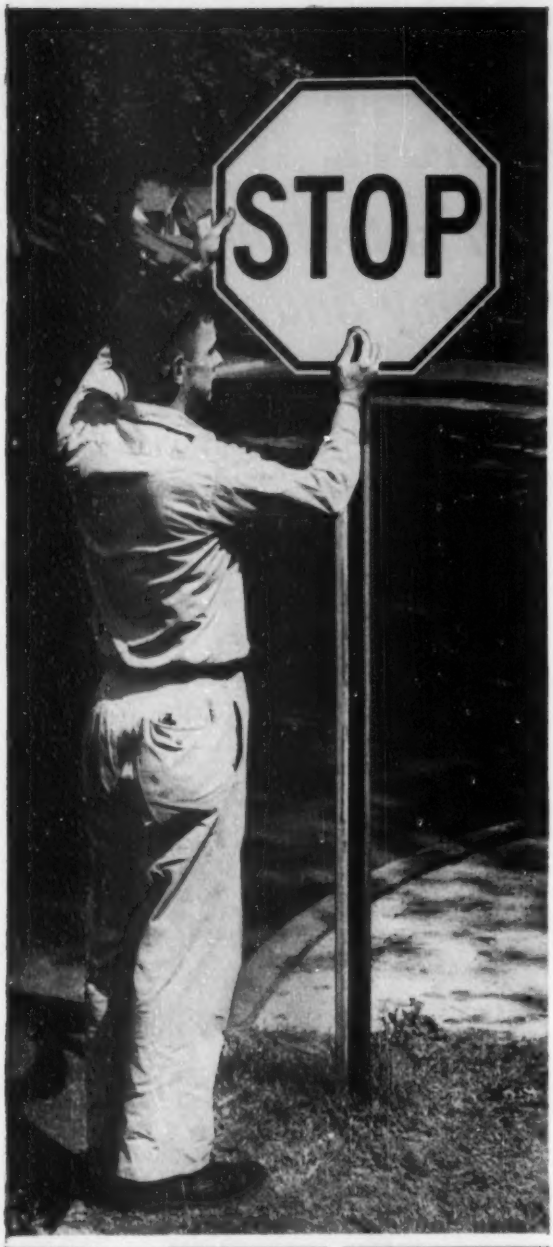
Please send me Catalog No. 300 on Hy-Lite Prestressed Concrete Lighting Standards.

Name_____

Affiliation_____

Address_____

City_____ Zone_____ State_____



Six reasons why traffic engineers choose the lightest, brightest signs of all!

Traffic engineers everywhere are turning to the perfect sign combination: Wide Angle Flat-Top "Scotchlite" Reflective Sheeting mounted on 61S-T6 Aluminum. Here's why they choose it:

1. Greater nighttime target value! "Scotchlite" Reflective Sheeting makes the entire sign stand out from as much as a quarter-of-a-mile away. Keeps it bright and readable throughout *entire* approach.

2. Complete reflectorization commands greater obedience! The fully reflectorized surface of Flat-Top "Scotchlite" Sheeting gives signs true shape, true color and true legend by night as well as by day. Instant nighttime recognition of these three factors means fewer nighttime accidents.

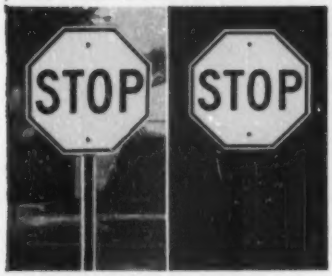
3. Lightweight—Easy-to-handle! The high strength-weight ratio of 61S-T6 Aluminum means signs can be made light enough for one man to handle and erect easily.

4. Rugged resistance to bend! The .081 gauge Aluminum is so strong, so bend-resistant, that even signs as wide as 30" need no cross-bracing.

5. Practically maintenance-free! Rain does most of the work . . . washes off dust and grime from smooth Flat-Top sign surface. Road oil or tar can be easily removed with ordinary solvents. And, because aluminum defies rust and corrosion, sign backings never need protective painting.

6. Toughest, most vandal-proof of all! A special report by the Utah State Road Commission states that "vandalism by theft of 'Scotchlite' signs is practically nil." Furthermore, if a sign of "Scotchlite" Sheeting is marred by shooting, the sign surface can be patched without removing from sign post.

Why not enjoy the many advantages of "Scotchlite" Sheeting and Aluminum signs on your roads? A 3M representative will be glad to give you the complete story. Write: Dept. AC-104, Reflective Products Division, Minnesota Mining and Mfg. Co., St. Paul 6, Minn.



"Scotchlite" Reflective Sheeting gives you full day and night visibility of the three essential sign characteristics: Shape . . . Color . . . Legend.

Glossy smooth sign surface is easy to clean. Aluminum backing won't rust or corrode—never needs paint.

FOR SHAPE . . . COLOR . . . LEGIBILITY

Reg. U.S. Pat. Off.

SCOTCHLITE

BRAND

REFLECTIVE SHEETING

The term "Scotchlite" is a registered trademark of Minnesota Mining and Mfg. Co., St. Paul 6, Minn. General Export: 122 E. 42nd St., New York 17, N.Y. In Canada: London, Ontario, Canada.

(*Continued from page 143*)

Improvements to be the amount set forth here and affecting such streets as follows:

(All streets to be lighted are then listed in the ordinance)
The above streets at the rate of 14 cents per front foot.

Section 2. That there be levied and assessed, and there is hereby, levied and assessed, upon the land bounding and abutting on the said improvements, the several amounts heretofore reported to this Council by said Board heretofore appointed, which assessment together with a description of said lots and land is now on file in the office of the director of finance of said city, and which assessment and several amounts thereof are in proportion to the benefits accruing to the property assessed.

Section 3. That the total assessment shall be paid in one annual installment together with the general taxes for each of the years 1954, 1955 and 1956.

Section 4. This ordinance is hereby declared to be an emergency measure for the reasons that its immediate passage is necessary for the preservation of the public peace, health, and safety of the City of University Heights, Ohio, and it shall take effect and be in force immediately from and after the date of its passing and approval. Earl W. Aurielius, Mayor, passed August 2, 1954, approved August 2, 1954.

Mercury-Vapor Lamp For Low Mounting

A 250-WATT color-corrected mercury-vapor lamp for mounting at heights under 20 feet is offered for street, bridge, and park lighting by Sylvania Electric Products, Inc., of New York City.

Charles A. Barton, general sales manager of the Lighting Division, suggests the lamp as a medium bright source for "tapering off" zones between brightly lit city streets and residential areas or open country.

Come to Waukegan at Night

THERE is talk in Waukegan, Ill., of a very large increase—double?—in population by 1964. Today's estimate of 45,000 compares with the official 38,946 of the 1950 census. A glimpse of the business district showed many improvements needed. A new street-lighting system was one of the first needs actually fulfilled.

20,000-Lumen Mercurys

The 160 new lights are 20,000-lumen mercury-vapor fixtures on American Concrete prestressed lighting standards 26¾ feet high. Bracket arms thrust the lights up to 29 feet above the pavement to cut glare to minimum. The units are on the pricipal two streets of the business district. A staggered arrangement with spacing of 82½ feet places six lights per block.

Assessments

Special assessments were collected to pay for this $156,000 project. Rates ranged from $3 to $7.50 per front foot, depending on the number of lights in the block. The city paid 10% of the total cost. Prompt payment by the merchants and by other businessmen provided cash for initial contract payments.

Credit

Principals in the project were Edward Durkin of the Chamber of Commerce, the *Waukegan News-Sun*, the utility, and Mayor Robert E. Coulson. Night-traffic accidents are reported fewer, and more people come to town at night; the installation has proved its value as a business-district rejuvenator.

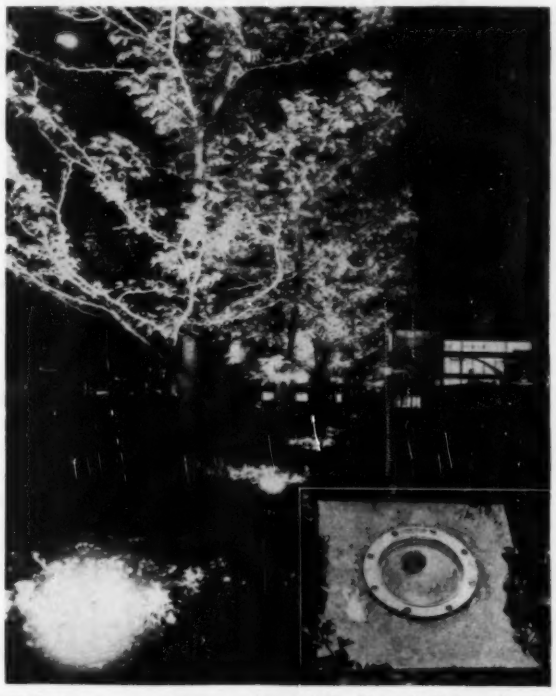
Flush-Mounted Fixtures Light Trees at United Nations

AN avenue of trees along the East River in front of United Nations headquarters in New York City is illuminated by 44 water-tight lighting fixtures manufactured by Crouse-Hinds Company, of Syracuse, N. Y.

It has long been known that lighting of the foliage of broad leaf trees from underneath by lights placed on or near the ground was more attractive than lighting from above. This is true because the underside of the leaves of most trees are a lighter color and reflects a much higher percentage of the light than does the top side of the leaves.

The tree-lighting installation at the United Nations headquarters is one of the first large-scale installations of this kind. The lights are mounted flush with the ground in concrete blocks. These 200-watt flush lights are located in the middle of beds of ground ivy with one light in the center of the space between each pair of trees so that each tree is lighted from two sides. Due to the locations of the lights in the beds of ground cover, they are inconspicuous in the daytime.

This large area of lighted foliage is not only attractive, but it also provides a soft glow on the surrounding walkways and ground area.



This is the row of trees in front of the United Nations headquarters that is lighted by fixtures set into concrete blocks at ground level. One of the fixtures is shown in the insert.

Look

at the extra features that assure dependability in ADLAKE Mercury Relays!

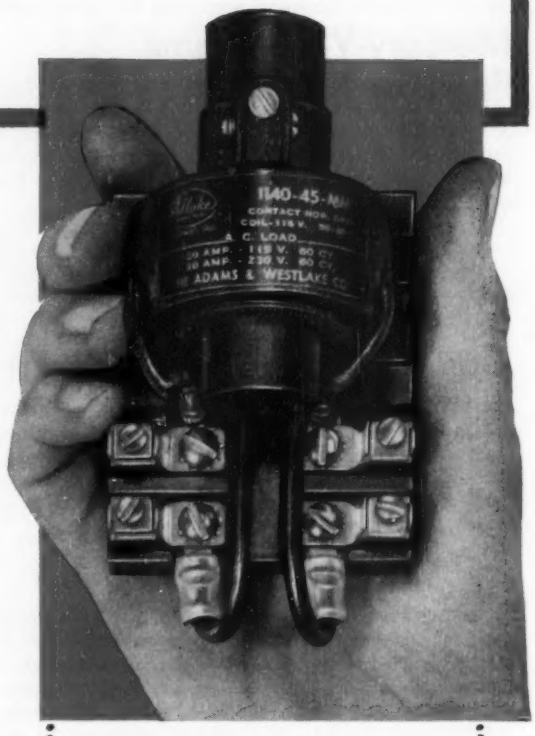
● **Dependability** is the sum of many things . . . and ADLAKE's dependability is built on engineering skill, exhaustive testing, and quality construction features like these:

Positive leak-proof sealing—assured by the use of properly selected metals and glass components with properly matched thermal expansion characteristics.

Arc-resisting ceramics—ceramics with great temperature-resistance are used to reduce any destructive effect caused by the arc.

Liquid mercury-to-mercury contacts—completely eliminates failures caused by low contact pressure, contact burning, pitting and sticking—and the inherent high surface tension of mercury imparts an ideal snap action to the contacts.

And, of course, ADLAKE Mercury Relays are hermetically sealed, require absolutely no maintenance, and are silent and chatterless. Write for your free copy of the ADLAKE Relay catalog today . . . The Adams & Westlake Company, 1176 N. Michigan, Elkhart, Indiana. In Canada, address Powerlite Devices, Ltd., Toronto.



"Mighty Midget" ADLAKE Relay—
Contact normally open or closed.

EVERY ADLAKE RELAY IS TESTED
—AND *GUARANTEED*
—TO MEET SPECIFICATIONS!

Adlake 97th year of serving the transportation and building industries

THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago
Manufacturers of ADLAKE Hermetically Sealed Mercury Relays

By ARTHUR E. KANE
Engineer of Construction and Maintenance
Department of Traffic
New York, N. Y.

Contractor Maintains New York City's Parking Meters

NEW YORK CITY keeps its more than 25,000 meters in good condition with a unit-price contract awarded each year by the Department of Traffic to the lowest responsible bidder.

Bids are obtained on three items: maintenance, installation, and removal. The last two items do not include wholesale installations and removals but merely routine changes in layout caused by the relocation of bus stops and similar changes in traffic regulations. Current prices call for the payment of $12 for each installation and $4 for each removal.

Under the first item, ***maintenance,*** at a current rate of 90 cents per month, the contractor is required to patrol each parking meter at least three times a week.

In making this patrol, he is required to check each meter carefully and wind it when necessary. A penalty clause of $3 per meter is invoked for each time it is overlooked on patrol, as determined by spot checks made by four inspectors employed by the Department of Traffic.

One method of checking we have found successful is to have an area visited by the inspectors before the contractor's mechanic is scheduled to make his patrol. The inspector slips a file card giving meter number, date, and inspector's name into each meter he finds defective. The contractor's employees are required to pull these cards when making repairs and return them to the Department of Traffic. Cards that are not returned on time warrant the charge of $3 for each patrol missed on the parking meter.

The contract also provides for the hooding and unhooding of meters in an amount not to exceed 5% of the total number of meters in service. However, the contractor is paid for maintaining hooded meters just as though they were in service, because he is required to maintain the meters, supports, and foundations in event of hits, knock downs, or vandalism.

Included in the maintenance item is an annual cleaning of all meter mechanisms and the painting of all pipe supports and parking-meter sign posts. Also, there is a provision that the contractor shall alter the time cycle of parking meters provided the number does not exceed 5% of the total in service.

The schedule requires the contractor to restore to proper working order on the same day all meters found defective before noon. Those meters found defective after noon must be restored before noon of the following day. Repairs to supports and foundations may be made within 48 hours. To facilitate this, the contractor operates a central communications bureau and installs a sticker on each meter housing giving his telephone number. In this way, over 90% of the trouble calls are transmitted directly to the contractor.

Daily Reports for Courts

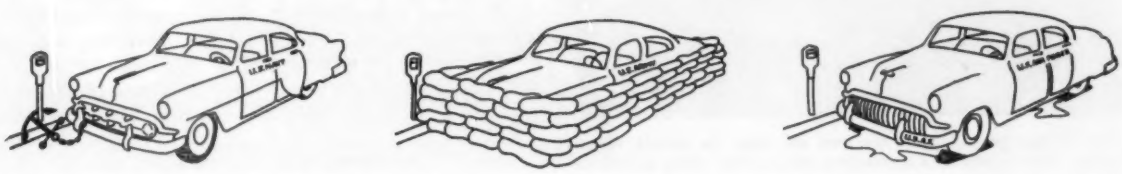
The contractor is required to submit a daily report for use primarily by the courts, giving the nature of each repair, time made, dial reading, and meter number. These reports are sent to the central Summons Control Bureau, so that complaints as to meters not operating properly when a summons was issued can be immediately verified. For statistical purposes, a monthly trouble report is submitted summarizing the work done in each area. Outage reports are also prepared so as to give the Finance Department a correlation of the revenue and operating hours of each meter.

While the rate is standardized at 10 cents, the time cycle varies from one-half hour to two hours, depending on the peculiarities of the district in which the meter is installed. Gross income is now averaging $160 per meter per year. Collections are made by the Finance Department.

The Department of Traffic has simplified its purchasing and warehousing by not supplying individual parts of the three different makes of meters, but requiring the contractor to furnish all parts needed for the operations outlined above. However, we do furnish the contractor complete parking meters to replace stolen meters only. Also, in order to encourage competition in bidding, the Department furnishes spares equal in number to 4% of the meters in operation, the spares to be used by the contractor in his daily operations and to be returned in good condition to the city upon termination of the contract.

$40,000 Worth of Vandalism

As might be expected with a 10-cent fee, vandalism causes our No. 1 maintenance problem. Rectifying damage by vandals will cost more than $40,000 this year, and, it is anticipated, almost 500 parking meters



—enough to equip a small town—will be stolen.

New York is now starting its second year of maintenance by contract. While the operations generally have been successful, we are faced with the usual difficulty one runs across in preparing any kind of maintenance contract, namely to define a good maintenance job in words but still keep the contract simple enough to inspect without having an inspector travel all day with each maintenance man.

We have improved last year's specification by placing a limitation upon the contractor that he employ one field man for every 800 meters. This clause should give us even better patrol than we had last year. A prime advantage of contracting for this type of service is that it relieves department personnel of all the multitudinous details concerned with maintenance, leaving them free to concentrate on inspection and supervision of the contractor's activities.

It should be noted that the contractor does the entire job of meter maintenance, including foundations and supports, but he does not renew stall lines on the pavement or repair parking-meter sign posts. These are maintained by our regular Sign Shop personnel in conjunction with other work.

Snow Plows Don't Have to Dig Up Plastic Markers

A PRINCIPAL OBJECTION to "permanent" pavement markers is that snow plows tend to dig them up.

Floyd Terrill, Street Superintendent at Hutchinson, Kans., says his city has around 4,000 plastic lane markers, and as far as he knows they lost only three markers last winter from snow-removal equipment. "Have your men watch each button," says Mr. Terrill, "and if you find one that doesn't stick, put it down again and don't drive the nail so deep." He also uses salt or calcium chloride at the first snowfall. This permits graders to slip the snow off the streets without excessive pushing.

In nearby Garden City, Kans., City Manager Robert Peart says: "We lose very few plastic traffic markers during the winter's snow removal, because snow-plow operators are careful at the crossings where the markers are used." In Wichita, Kans., Traffic Engineer W. W. Rankin reports that the plastic lane markers are installed only on asphalt-surfaced streets. The hot summer sun has made the markers a part of the pavement and impervious to snow-removal jobs.

Dur-O-Line plastic lane markers are easy to install when using both mastic and a securing pin to hold them in place.

Frederick R. Rundle, Superintendent of Public Works for the Village of Hempstead, N. Y., claims they lose a negligible number of plastic markers because they have put shoes on their snow-plow blades that give a 1 to 2 inch clearance above the surface of the street. "This seems to be adequate," states Mr. Rundle, "to clear manhole covers, valve boxes, plastic markers, etc."

Similar practice in Billings, Mont., where, City Engineer S. B. Ward says, "our operators know the location of these buttons and always maintain a clearance between the pavement and the bottom of the blade."

"After Fall River, Mass., lost 35% of their 1,000 plastic traffic line markers due to snow plows," says Thomas Logan, Commissioner of Public Works, "the crews hit on the idea of using small rollers at each end of the snow-plow blade to keep the blade off the surface of the street. Now we are also using a 50-50 mixture of sand and salt when the snow gets about 1 inch deep."

Many city engineers have found that leaving about 1 inch of snow on the streets, rather than skinning the snow off clear down to the asphalt, leaves a less hazardous street and keeps the streets in better condition.

New York City continues to use plastic lane markers for cross-walks in place of yellow paint. There is no denying the saving in cost and the improvement in appearance. Incidentally, a patent was issued by the U. S. Patent Office this year to the Traffic Safety Supply Company, of Portland, Ore., covering the plastic marker as a device to designate traffic lanes.

Parking Meters "Outstanding Achievement" in Greenwich

THE installation of parking meters in the Town of Greenwich, Conn., has been financed entirely by meter receipts; the net meter receipts, after paying for the meters and the cost of operation and maintenance, will be used to develop off-street parking lots. They can, in addition, be used for the installation of various traffic-control devices. Average receipts for the 62 weeks that the meters have been installed is $1,035 per week.

Following is a quotation from our 1953 Annual Report which gives some of the background leading to the installation of our meters, as reported by our Board of Selectmen.

> The outstanding achievement of the Board of Selectmen was loosening parking congestion that has existed for years in the Town's central business district. This was accomplished by installing 867 meters and providing off-street parking facilities. The parking-meter program rigidly and vigorously enforced by the Police Department has produced highly satisfactory turnover and has met with enthusiastic approval of the Town's taxpayers.

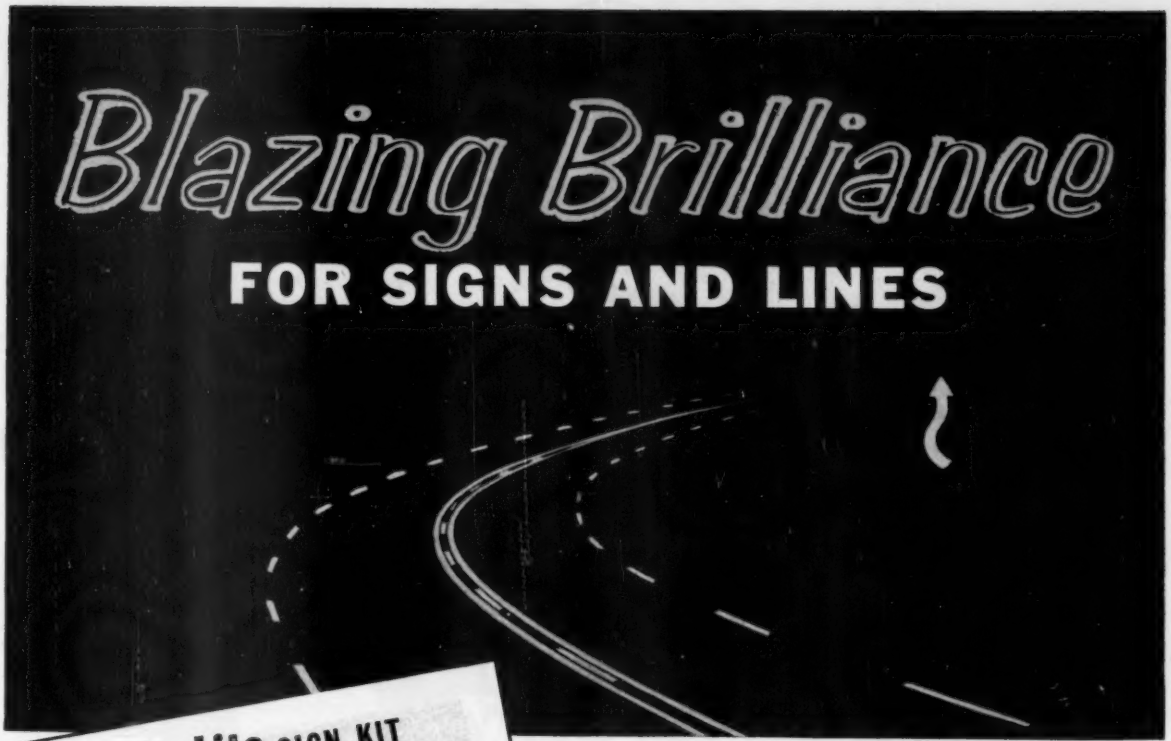
The meters are "Mi-Co" and are manufactured by the Michaels Art Bronze Company, of Covington, Ky. Our 867 meters have grown to 968 meters in operation.

WILLIAM H. SHERMAN
Comptroller
Greenwich, Conn.

(*Continued on page 153*)

Blazing Brilliance

FOR SIGNS AND LINES



Hy-Life SIGN KIT

✓ Beads ✓ Binder ✓ Reducer

Reflectorize any sign; metal, wood, plastic etc., by applying binder and beads as desired. Binder applied by brush, spray or roller. Hylite Beads assure blazing brilliance. Kits available in various sizes.

SUPERAY ENAMELS

Remarkable new paints in 12 colors, containing binder for bead retention. Merely paint signs by brush, spray or roller and apply beads, for brilliant reflectivity.

Hy-Line STRIPING PAINTS

Full bodied, long life traffic line paints for regular marking or reflective marking. Dries fast, strong adhesive qualities, and abrasion resistant. Colors remain clear and bright.

Remarkable, new, reflective beads with diamond brilliance and crystal clarity!

Now you can have super brilliance, remarkable night time visibility for signs and lines, thanks to M-B HYLITE Reflective BEADS. An entirely new process produces a bead with blazing brilliance, wide angle reflectivity, perfect uniformity and crystal clarity. It's the perfect answer to long-range visibility and safety, day or night.

The M-B complete Safety Program includes HY-LITE BEADS, sign kits for reflectorizing signs, SUPERAY ENAMELS for sign applications, and HY-LINE paints for traffic line striping.

You've never seen anything like these amazing new M-B products . . . you'll hardly believe it when you see them. If you're sincerely interested in providing your community with the finest safety measures possible, you'll send for complete information today.

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ADDRESS _____

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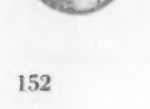
*PRISMO PLASTIX

Write or phone today for full details in bulletin No. PX-53.



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SAFETY CORPORATION

HUNTINGDON, PENNSYLVANIA

PRISMO
Super Life Line

No greater safety on the open road than when PRISMO markings are used! The PRISMO process uses the passage of light rays through glass spheres embedded in semi-plastic binder to produce a dazzling reflective marker. It is the answer to the increasing need for safety on our highways. Economy, low initial cost, extreme durability and *full time*, visibility are PRISMO'S contributions!

Send today for Free Catalog #354.

707

Is Your City Tired of Traffic Congestion?

WHEN it comes to parking, architects advocate parking garages, engineers favor fringe parking connected to the business district by endless conveyor belts, while city officials want to reduce congestion in the business district.

They are learning that the way to do this is to remove all-day, long-time, commuter parking from the business district, and provide facilities for it alongside a loop or encircling freeway around the business district.

This is the basic idea of "Every City a Traffic Strainer." This is the plan that has nothing to sell except reduced congestion, more people enjoying themselves, and better business and higher taxes in the central business district.

Build garages for short-time off-street parking in the business district and for long-time fringe parking? Why sure, and also parking meters for short-time parking and lots for long-time parking. Endless belts from the outer parking areas to the business district? Why sure, and also transit vehicles.

The big idea is the loop to handle all vehicles aimed toward the business district but that have no business to transact there; tying the fringe or outer parking areas together by locating them alongside the loop; in the large cities providing transit service from outer parking areas to the central business district.

Is This New Traffic Committee Going Places?

MORE THAN 140 men have been named to serve with the National Committee on Urban Transportation, the objectives of whose program are to show cities how to—

—determine their over-all transportation needs;
—employ standards for street use;
—employ standards for bus design, proper loading areas, and how far patrons will walk to use mass transit;
—measure the capacity of an urban street system;
—keep track of the physical condition of street systems, sewers, and traffic requirements;
—collect information on transit routes, stops, schedules, and actual travel times at different times of day;
—review urban transportation laws and ordinances;
—review the effectiveness of planning, financing, construction, maintenance, and regulation of traffic;
—determine how much money it takes to have an adequate urban transportation system.

Whatever the objectives stated in advance, it is safe to say that the main objective will be organized adequate parking and reduced congestion. To attain these long-desired results requires that efforts stem from a sound basic plan. That plan is available and more and more cities are adopting the "traffic strainer" idea of getting the most out of existing streets.

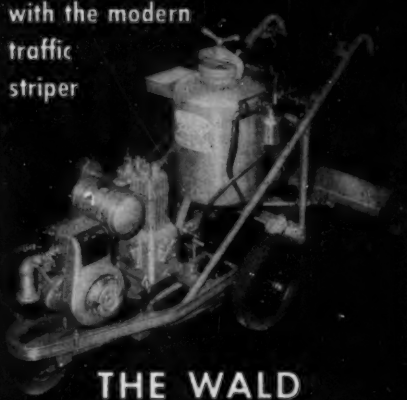
If this newly formed committee devotes its efforts to searching out by what means every city can make itself a traffic strainer, there is sound reason to believe that an all-around permanently successful job will be performed.

Glenn C. Richards, Detroit's acting Commissioner of Public Works, chairman, and Orin F. Nolting, assistant director of the International City Managers' Association, of Chicago, is secretary.

(Continued on page 157)

NEW PERFORMANCE
TOP ECONOMY

with the modern
traffic
striper



THE WALD
REFLECTO LINER
MODEL 12

A punchy, 6 hp, air-cooled engine delivers smooth, sure power to propel machine and operator at speeds of from 3 to 5 mph. Stripe more miles of traffic lines daily with the Model 12.

The sturdy, twin-cylinder compressor has dependable output of 12.5 cubic feet of air at 100 pounds pressure. A 100% air reserve is developed which gives operator quick and sure response to both traction and line application. The air reserve is convenient for hand-gun take-off and other labor saving accessories.

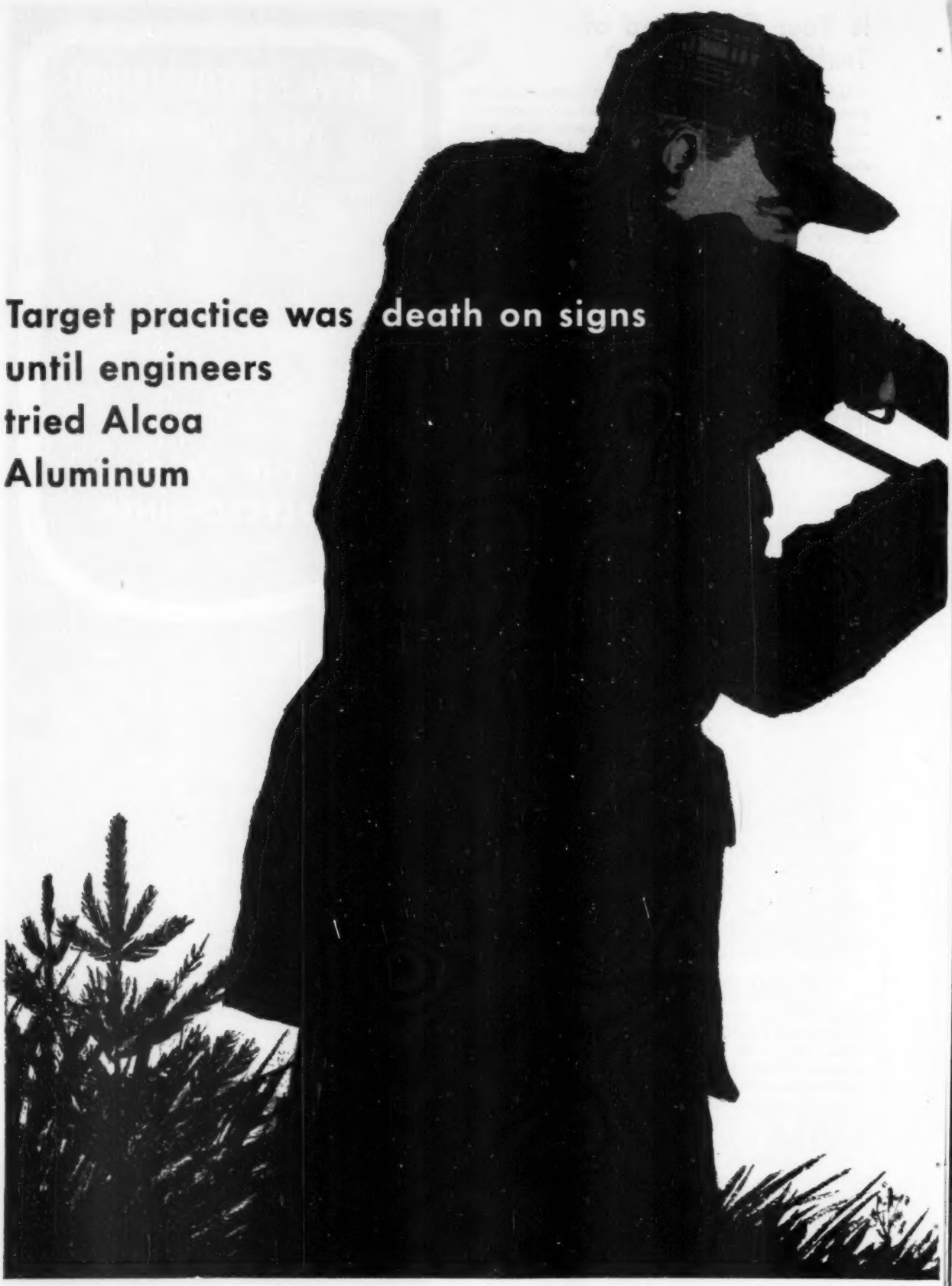
The Wald Nu-Matic spray gun has lateral and vertical adjustments to permit laying of uniform, 2"-6" lines to within inches of curb or wall. Handles plain or reflective materials to lay clean-cut, traffic lines with ease.

Ample 12 gallon, 150 psi material tank has large 5¾" opening for quick filling, easy cleaning.

Wald builds modern Striping Equipment to meet your every need! Write today for full details on Wald's complete line. Ask for Catalog W10, your Handbook of Striping Equipment.

WALD INDUSTRIES, INC.
HUNTINGDON, PA.

Target practice was death on signs until engineers tried Alcoa Aluminum



When rifle slugs tear through a steel highway sign, only prompt and costly repainting can save it. For, once the protective paint film is broken, rust spreads relentlessly to destroy legibility and eventually makes scrap of the sign, itself.

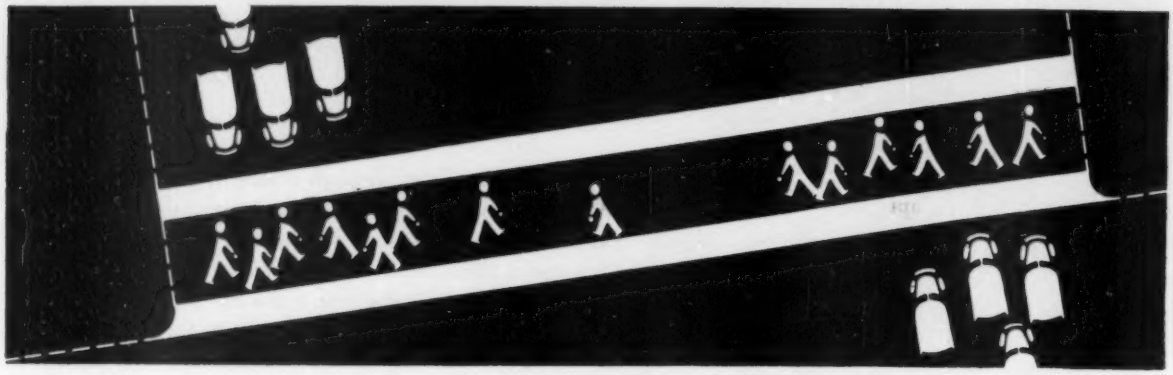
Traffic engineers in eighteen states have found the answer to vandalism that tapped their budgets for thousands of dollars every year and created a major threat to highway safety. It's Alcoa® Aluminum. Even when bullets expose bare metal, there's no deterioration, so repairs can wait while the sign stays on the job. Savings are realized, too, on handling and erection, because aluminum signs weigh only half as much as steel.

GET ALL THE FACTS

Alcoa, with recommendations backed by 66 years of experience, offers you expert counsel on alloys, fabrication and finishing for painted and reflectorized signs and markers, bridge railings, gratings, lighting standards, barricades and fencing. Get the details by calling your local Alcoa sales office. Or write: ALUMINUM COMPANY OF AMERICA, 1976-K Alcoa Building, Pittsburgh, 19, Pennsylvania.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA



VEON*

the instant-drying, lasting line...
eliminates all cross-walk problems

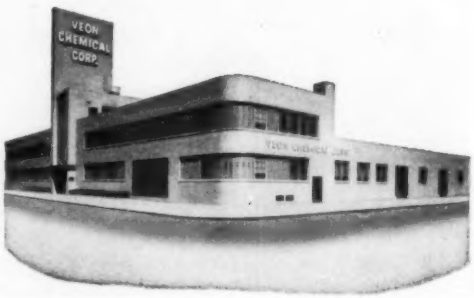
VEON ushers in a new era. VEON is the only new and permanent cross-walk development in the past two decades. VEON makes obsolete . . . paints, buttons, discs and slabs. Cross-walk lines of ready-prepared VEON compound dry instantly, never smudge, retain their clear, brilliant color (white, yellow or red) and outlast paint by at least 5-to-1! Yet VEON is applied as easily as ordinary paint by a single operator.

Test VEON on your busiest intersection — get instant and lasting proof that VEON cross-walks will help your traffic flow . . . will allow immediate traffic passage . . . and will cut your mounting manpower and maintenance costs.

VEON is available through your regular distribution sources.

*TRADE MARK

VEON CHEMICAL CORPORATION
22-09 Bridge Plaza North, Long Island City 1, N. Y.



City Transit Is Everybody's Business

From the Georgia Senate Report

THE NETWORK of radial transit lines converging on the city's central business district each day carries more people downtown to work, shop, and for other reasons, than all other forms of transportation combined.

This working force and business activity, served mainly by transit sustains Atlanta's position as the economic capital of the Southeast.

Transit riders, by a space ratio of 15 to 1, are the most efficient users of Atlanta's limited street space. Increased transit riding reduces the need for expressways and eases the downtown parking problem.

Transit is indeed everybody's business, but everybody does not realize it. Instead, there has been a dangerous tendency on the part of the general public and of local and state government to consider transit merely in terms of the Atlanta Transit Company and its subsidiary, the Metropolitan Transit Company.

Transit is far more than merely one or two companies. Transit is an idea, and it is a vital part of the solution to the problem of moving people which now plagues Atlanta and many other Georgia cities.

The private companies are merely instruments. The more important to the city is the transit idea itself, the expansion of transit use in the public interest, and the use of the transit system to meet the ever-increasing transportation problem.

Wanted: More Transit Riders

The great problem facing Atlanta, as well as all other growing cities of Georgia and the other states, is that of assuring the easy movement of people within the city's environs. Motor-vehicle registration of the four counties of the Atlanta area have increased from 124,400 in 1945 to about 251,000 in 1953, an increase of 102% in only eight years.

Automobiles depend on streets and expressways and parking facilities downtown. The availability of these same streets and expressways, which encourage more automobile traffic, and cars parked in the streets slow up transit service and make it unpopular.

Since most of the transit passengers ride in the rush hours, and since these same hours coincide with the time of the greatest automobile traffic, it is obvious that it is in the community interest to have as many persons as possible ride transit in these hours. The good record of the Atlanta Transit Company in other respects lends credence to the belief that bad transit in rush hours is due in large measure to factors beyond the Company's control.

Atlanta's central business district, to which some 150,000 persons come daily, supplies about 30% of the city's tax revenue. Its health is of the greatest importance. On the 16 major arteries out of the downtown section during the peak half-hour between 5:15 and 5:45 p.m. on a typical business day, 267 transit vehicles moved 12,094 persons, while 5,310 automobiles moved only 8,762 persons.

Among 25,000 downtown office workers, exactly 50% use transit; 33.9% use their own automobiles; 15.4% ride to work with friends; and 0.7% use other means of transportation.

Among 19,000 retail employees, the survey found that 67.6% use transit; 19.1% use their own automobiles; 11.8% ride with friends, and 1.5% use other means.

Of those 93,000 persons who come to town to shop or for other purposes the survey showed 55.2% use transit; 32.6% come in their own automobiles; 6.1% ride in with a friend; while another 6.1% walk or come by train or use some other means of transportation.

Atlanta's narrow streets, its difficult intersections, its steadily increasing population, and number of automobiles make it imperative that the streets be used with maximum efficiency. This means that every street should be made available to as many people—not merely vehicles—as possible. Parking is not a right, but a privilege.

Staff conferences of those working on this study, the report of the Atlanta Parking Commission, and the master street plan for Atlanta have developed the need for two types of parking facilities in connection with the Atlanta expressway program Both directly affect transit.

One type of facility would be located at the outer extremities of the expressways. To such facilities, people would drive, or be driven, in the morning to board an express bus to town. They would return to their cars at night. Thus, they would have the advantage of expressway use without the downtown parking problem.

Another type of parking facility probably will be necessary along the expressways close to the downtown off-ramps. Such facilities would be served by inexpensive shuttle buses to the center of the city.

Systems of this nature with 2,000 to 3,000 car spaces are already proving valuable in relieving downtown traffic in Cleveland, St. Louis, and Chicago. In these cities, however, it has been found that such parking must be free, if it is to keep the motorist out of the crowded downtown area.

3 to 5 Miles Per Hour

One of the principal obstacles to increasing the speed and improving the regularity of transit in Atlanta lies in the fact that parking regulations on many transit thoroughfares are simply not adapted to moving traffic.

In many cases, half of the street width in congested sections outside the central area has been almost permanently dedicated to vehicle storage, with the result that thousands of hours are lost annually due to slow transit and automobile speeds. Average inbound speeds range from 3¼ to 5½ miles per hour throughout the day in the most congested area outside the downtown district.

Mere prohibition of parking is inadequate. All stopping at the curb in rush hours should be prohibited so that the curb lane may be fully available for moving traffic.

Metered parking in the downtown area exists on certain streets where parking should not be allowed. Wherever streets are needed to move traffic, their use for storage at fees of one cent to ten cents should be abandoned. Progressive cities have recognized that meters may properly be used in areas where parking can be permitted without adverse effect, but not to ration parking or to obtain revenue on streets where traffic crowding may thereby result.

Parking-garage movements, generally heaviest in peak hours, create delays in a few downtown locations. Automobiles waiting in line to enter

(*Continued on page 169*)

now...

for the first time...

A PRACTICAL

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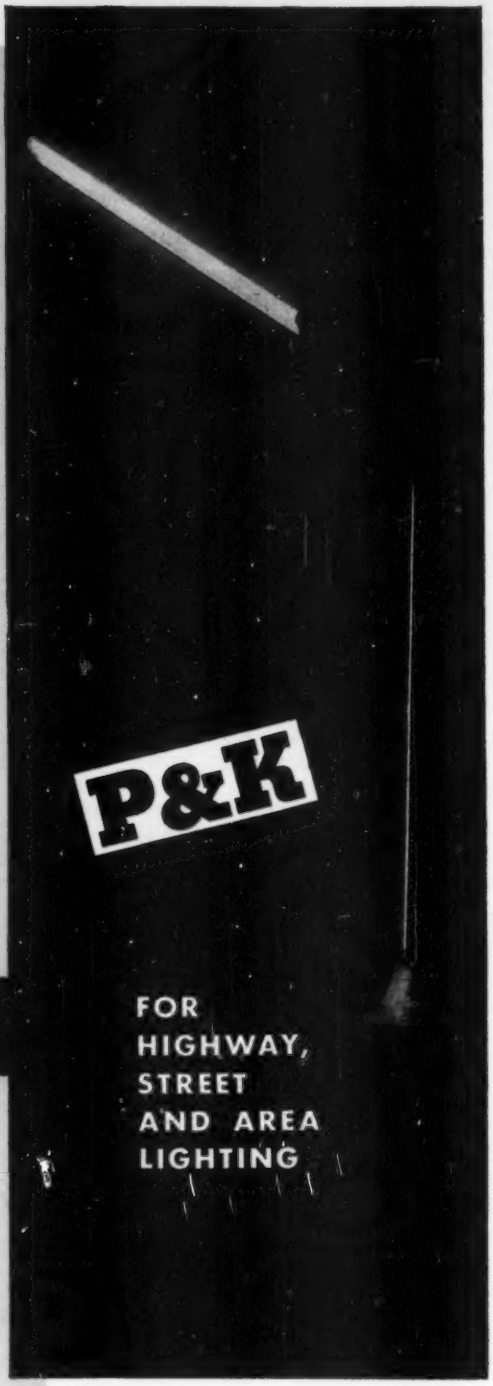
LUMINAIRE & STANDARD

Again, P & K leads the way with a great new development introducing a new era in highway, street, and area lighting. With these new P & K engineered fluorescent luminaires, *available as a complete package with companion-designed P & K Aluminum Standards*, any outdoor lighting facility can achieve new highs in performance, versatility and appearance... at new all-time lows in cost!

HOW YOUR LIGHTING CAN BENEFIT WITH
P & K FLUORESCENT LUMINAIRES



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ENGINEERS AND OFFICIALS CONCERNED WITH OUTDOOR LIGHTING ARE INVITED TO WRITE FOR FULL INFORMATION.

Pfaff & Kendall
84 Foundry Street
Newark 5, New Jersey

REPORT ON WINTER OF 1953-54!

How STERLING *AUGER-ACTION* ROCK SALT helped save over 100 TIMES* the total cost of DETROIT'S ice and snow-control program

*Figures courtesy Glenn C. Richards, Commissioner Department of Public Works, Detroit, Mich.

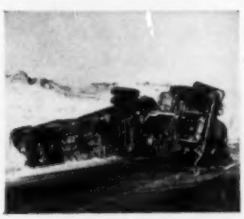
Here's What Happened When The Motor City Fought 35 Snow Storms With STERLING *Auger-Action* ROCK SALT

MINIMIZED EMPLOYEE LATENESS AND ABSENTEEISM

City experts agree that each of Detroit's 35 snow and ice storms, *without* rock salt's prompt action, would have meant an average ½ hour delay per employee in to-work transportation. $55,638,205 in *saved* man hours! Impassable streets would have cost retailers an estimated $26,342,500! And Detroit Street Railways would have lost more than $2,000,000 in uncollected fares. A total estimated saving of $83,980,705!

SAVED MILLIONS FOR DETROIT TRUCKERS, TOO

Detroit's Trucking Association reports a normal *full day's work* throughout the city's 35 storms last year. If streets had remained snowbound or slippery, they would have had only an average of a *half* day's work for a full day's pay—plus gasoline and maintenance costs. Estimated savings—*seven million dollars!*



HELPED LOWER AUTO LIABILITY AND COLLISION INSURANCE RATES

Though other factors besides the city's "Bare Pavement" policy entered into it, the fact remains that Detroit's liability and collision insurance rates are only about one-half those of other cities of comparable size which do *not* use straight rock salt ice-and-snow-control methods.

IN MAN-HOURS IN DOLLARS **STERLING** *AUGER-ACTION* **ROCK SALT** **COSTS LESS SAVES MORE**

City, County, State Highway Officials!
SEND THIS COUPON TODAY!

International Salt Co., Inc., Scranton 2, Pa.
The Detroit Report interests me. Would like to know how Sterling *Auger-Action* Rock Salt might effect similar savings in our program. Please have representative call.

Name_____ Title_____

Department_____

Address_____

City_____ Zone____ State_____

Every pound *helps haul itself* on these advanced FWD trucks. That's because it's "working weight." Improved Math-Matic Design—*exclusive* on FWD's—correctly proportions power to weight on front and rear axles. Each wheel's load makes it *grip harder*, using every ounce of power for greater controllable traction *on* or *off* the road.

From 30 to 37% longer tire life* . . . up to 82% more tractive ability* . . . safest by far to operate under *any* driving conditions* . . . all these extra values without extra fuel consumption—here are dollar and *sense* reasons why *you* should get full facts immediately on this greatly advanced line of heavy-duty trucks. Four-wheel-drive and six-wheel-drive models for any "truck-killing" job

★ **Greater power-weight ratio, higher RPM, thru new engine design!**

★ **Lower maintenance costs because of standardized parts!**

★ **Larger legal payload thru better weight distribution!**

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FWD MATH-MATIC DESIGN

BUILDERS OF AMERICA'S FOREMOST HEAVY-DUTY TRUCKS

THE FOUR WHEEL DRIVE AUTO COMPANY, CLINTONVILLE, WISCONSIN, *Canadian Factory,* KITCHENER, ONTARIO

Modern Water Rates

(Continued from page 128)

Miscellaneous Regulations

1. A special rate which is substantially higher is charged for the Emerald Lake District which requires extra pumping expense.

2. Certain areas outside the city are requested to limit water use during the summer because of inadequate distribution system.

3. No restrictions are placed on air conditioning or lawn sprinkling for users within the city.

4. No charges are made either for public or private fire protection.

General Data

Population served	37,000
Services (100% metered)	11,500
Hydrants	750
Valves	1,250
Miles of mains	105
Storage facilities—6,000,000 gallons in covered reservoirs 200,000 gallons in wooden tanks	
Supply—San Francisco Hetch Hetchy transmission lines	
Treatment—none	
Average demand	4.2 mgd
Plant capacity—metered connections for	10 mgd

Typical Costs Bimonthly

Gallons	*Cubic Feet*	*Costs*
6,000	800	$3.60
10,000	1,333	4.40
20,000	2,667	8.80

Remarks

1. Present rates exist since 1951 and represent a raise of 20% over those established in 1948.

2. No water is distributed without charge. Other municipal departments pay for water use.

3. Meters are owned by the department, are placed at the lot line, or behind the curb, and checked for accuracy upon request or at time of repairs.

4. Bills are prepared without the use of automatic billing equipment. Garbage-collection and sewer-service charges are entered separately on the same bill

H. L. Winter
Water Superintendent

STRUTHERS, OHIO

(Ohio Water Service Company) Rates Per Quarter

Volume of Water (in cubic feet)	*Metered Charges* (per 1,000 cubic feet)
First 1,000	$3.30 (min.)
Next 9,000	2.75
" 90,000	2.25
Excess	1.75

Miscellaneous Regulations

1. Minimum charge of $3.30, including 1,000 cubic feet of water, is for a ⅝- or ¾-inch meter. The charge is increased in proportion to the areas for meters larger than ¾-inch.

2. Charges calculated from the schedule shown above are increased 11.31% to arrive at the billed charge. (See remarks below.)

Fire-Protection Rates

	Charge
Public (per year)	
each hydrant	$35.00
Private (per quarter)	
per inch-connection	
1¼	3.30
1½	4.20
2	5.10
2½	6.00
per hydrant	12.50
per automatic sprinkler	
inch-connection / square feet of floor space	
2 / 5,000	10.50
4 / 10,000	17.10
6 / 20,000	25.50
Excess / per 1,000	.40

General Data

Population served	17,000
Services (100% metered)	4,787
Hydrants	317
Valves	504
Miles of mains	58
Supply—lakes and impounding reservoir	
Treatment—coagulation, sedimentation, chlorination, filtration	
Storage facilities—2 standpipes with 1,180,000 gallons	
Average demand	1.3 mgd
Plant capacity	1.5 mgd

Typical Costs Per Quarter

Gallons	*Cubic Feet*	*Costs*
9,000	1,200	$4.72
15,000	2,000	6.72
30,000	4,000	12.83

Remarks

1. Present rates, established in January 1952, represent a 11.31% raise.

2. Public schools receive 500,000 gallons of free water each year.

3. Meters are owned by the user and are placed in his building.

4. Bills are prepared on International Business Machine equipment.

J. William Davis, Jr.
Manager

(Continued on page 163)

MH
LOOK FOR THIS MARK
OF QUALITY
ON VALVES AND HYDRANTS
The widespread and fast-growing demand for M & H Valves, Hydrants and accessories is due primarily to outstanding superior quality in design, materials and workmanship. In the M & H double-disc gate valve, for example, the iron body and the bonnet flanges are heavily proportioned and unusually strong. The discs are held in alignment by guides and are seated or released by three-point action of bronze spreaders. The bronze seat rings are exceptionally heavy. Either disc may be used on the down-stream side. For additional information about the advantages of M & H Valves or Hydrants, write M & H VALVE and FITTINGS COMPANY, ANNISTON, ALABAMA.
ANNISTON ALA
M&H PRODUCTS
FOR WATER WORKS • FILTER PLANTS INDUSTRY • SEWAGE DISPOSAL AND FIRE PROTECTION

Handsome (and thrifty) Solution to Center Boulevard Lighting

Millerbernd Elite* Twin Octa-Tubes

*U.S. & Foreign Patents Pending

FOR RE-LIGHTING this handsome boulevard, the North Dakota Agricultural College at Fargo, selected Elite "Twins". The Luminaires are Westinghouse OV-20's, mounted on 8′-0″ arms at a height of 28′-0″. In addition to the 14 "Twins" in this installation, the college has 28 matching single-arm Elite Octa-Tubes located throughout the campus.

The distinctive styling of the Elite Octa-Tube is at home on college grounds, on streets and thorofares, on municipal playgrounds and parking areas . . . wherever you need effective, modern lighting.

Note the unusual grace and beauty of the standard, the unbroken clean line from tapered base to the tip of the gently curved mast arm. Elite Octa-Tubes look as modern as tomorrow, *stay modern longer*. If you are considering re-lighting, see how much more the Elite Octa-Tube offers in appearance, strength, ease of installation and reduced maintenance.

Write for Bulletin OTA.

Millerbernd

MANUFACTURING CO.
WINSTED, MINNESOTA

Modern Water Rates

(Continued from page 161)

MASSILLON, OHIO

Rates Per Month

Size of Meter (in inches)	*Minimum Charges*	*Cubic Feet Furnished*
⅝ or ¾	$ 1.25	275
1	1.95	430
1½	3.70	820
2 (d or c)*	5.90	1,310
2 (c or p)**	6.45	1,430
3 (d or c)	11.60	2,580
3 (c or p)	14.75	3,280
4 (d or c)	18.40	4,090
4 (c or p)	25.80	5,940
6 (d or c)	36.75	9,070
6 (c or p)	58.85	15,790

* disc or compound
** crest or protectus

Metered Charges

Volume of Water (in cubic feet)	*Charges* (per 100 cubic feet)
First 275	$1.25 (min.)
Next 4,725	.45
" 10,000	.35
Excess	.17

Fire Protection Rates Per Month

	Charges
Public	
each hydrant over 625	$3.65
Private	
inch-hose connection	
1¼	1.10
1½	1.40
2	1.70
2½	2.00
hydrant	3.65
automatic sprinklers	

inch-connection	square feet of floor space	
2	5,000	3.40
4	10,000	5.70
6	20,000	8.50
	additional, per 1,000 feet	.14

Miscellaneous Regulations

1. Company places an additional charge of 5% on bills for late payment.
2. Company places no restrictions on water used either for lawn sprinkling or air conditioning.
3. Company supplies limited amounts of water without charge to various municipal buildings and parks.
4. Company makes a free water allowance to public and parochial schools of 9 gallons per pupil per day for 200 days.

General Data

Population served	37,000
Services (100% metered)	10,167
Hydrants	706
Valves	1,125
Miles of mains	95
Supply—creek and 15 wells	
Treatment—lime and soda ash softening	
Storage facilities—	700,000 gallons in two standpipes
	1,500,000 gallons in covered reservoir
Average demand	2.5 mgd
Plant capacity	3.5 mgd

Typical Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$1.81
5,000	667	3.01
10,000	1,333	6.01

Remarks

1. Company owns its meters; places them in the building occupied by water user. Meters are checked once every five years.
2. Bills are prepared on a National Cash Register automatic billing machine.
3. The company owns and installs house service lines at its expense from the main in the street to the curb box.
4. Rates were established in 1930 and represent a rise of 20%.

A. A. Ulrich, *Vice President, Ohio Water Service Company*

SUMMIT, N. J.

and Nearby Municipalities (Commonwealth Water Company)

Minimum Charges Per Quarter

Size of Meter (in inches)	*Charges* Schedule A	Schedule B	*Volume Allowed* (in cubic feet)
⅝	$1.75	$1.88	200
¾	2.62	2.82	300
1	6.12	6.58	700
1½	15.75	16.92	1,800
2	21.00	22.56	2,400
3	52.50	56.40	6,000
4	78.75	84.60	9,000
6	144.37	155.10	16,500

Metered Charges Per Quarter

Volume of Water (in cubic feet)	*Charges* (per 100 cubic feet) Schedule A	Schedule B
First 10,000	$0.34	$0.40
Next 90,000	.26	.33
" 900,000	.20	.26
Excess	.14	.20

Fire Service Rates Per Quarter

	Charges
Public	
per inch of diameter, per foot of distribution and transmission main	$0.002545
per hydrant	3.75
Private	
4-inch or smaller connection	$1.25
6-inch connection	$2.50

Miscellaneous Regulations

1. Schedule B covers an area requiring higher pumping pressures than Schedule A.
2. During excessive dry spells the company restricts lawn sprinkling to alternate days.
3. Company requires air conditioners with a capacity of 6 tons or more to be of the recirculation type.

General Data

Population served	172,520
Services (100% metered)	39,175
Hydrants	3,341
Valves	5,055
Miles of mains	506
Supply—lakes, wells	
Treatment—rapid sand filtration	
Storage facilities—1,320,000,000 gallons in open reservoirs	
3,920,000 gallons in covered reservoirs	
Average demand	17 mgd
Plant capacity	25 mgd

Remarks

1. The company owns all meters; reads large ones monthly, others quarterly.
2. Bills are prepared on Burroughs automatic equipment.
3. Present rates went into effect April 30, 1952, representing a 25% increase.

Thomas W. Coleman
Manager

BOERNE, TEXAS

Rates Per Month

Volume of Water (in gallons)	*Charges*
First 3,000	$1.75 (min.)
Next 2,000	.75
" 5,000	1.75
" 10,000	2.50
Excess	.20 (per 1,000 gallons)

General Data

Population served	1,800
Services (100% metered)	685
Hydrants	51
Miles of mains	10.5
Supply—wells	
Treatment—chlorination	
Storage facilities—elevated tank, 75,000 gallons	
covered reservoir, 100,000 gallons	

Typical Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$1.75
5,000	667	2.50
10,000	1,333	4.25

Remarks

1. Water utility neither diverts funds to other city functions nor distributes water free of charge to any service.
2. Utility owns all meters; places them in a meter box at the lot line. Meters are checked for accuracy once every seven years.
3. City imposes a 10% penalty charge for late payment.
4. The water has natural fluorides in sufficient quantity for dental health protection.

Edgar Schwarz, Jr.
Assistant Manager

ASHEBORO, N. C.

Rates Per Month

Volume of Water (in cubic feet)	*Metered Charges* (per 100 cubic feet)
First 266	$0.51
Next 1,068	.46
" 5,333	.41
" 6,667	.36
" 13,333	.31
Excess	.26

Miscellaneous Regulations

1. Minimum water charge is $1.36.
2. Out-of-city rates are double.
3. City makes no special charge for fire protection.

General Data

Population served	12,500
Services (100% metered)	4,080
Hydrants	258
Miles of mains	45
Supply—lakes	
Treatment—rapid sand filtration	
Storage facilities—500,000 gallons in elevated tanks	
920,000 gallons in covered reservoirs	
Average demand	1.25 mgd
Plant capacity	1.50 mgd

Typical Costs Per Month

Gallons	*Cubic Feet*	*Costs*
3,000	400	$1.98
5,000	667	3.20
10,000	1,333	6.21

Remarks

1. City supplies water free to other municipal departments only. No funds are diverted from the water department.
2. Water Department owns all meters; places them in a meter box at the lot line.
3. Bills are prepared with a Burroughs 200 automatic billing machine.
4. Rates have remained unchanged since 1947.

W. T. Cox
Director of Public Works and Utilities

New! "Municipal" now offers you

ALUMINUM STREET SIGNS!

Rust-proof! Lightweight!

Unbreakable "Tenzaloy" Cast Aluminum signs. Full 6" plates with 4" raised letters, plain or reflectorized, with lifetime durability! (left photo)

Also for the first time!

Chip resistant, rustproof Porcelain on Aluminum sign plates and frames with "Municipal's" famous 15 year guarantee. (right photo)

Corrosion resistant "Tenzaloy" now used exclusively for all cast frames.

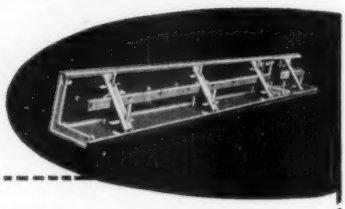
Furthermore just think of the dollars you'll save on shipping, installation and maintenance by using lightweight "Municipal" Aluminum Signs. And remember "Giving you more for your money" is a habit with "Municipal". Make "Municipal" your habit and save. At your request we will rush to you complete details and price list.

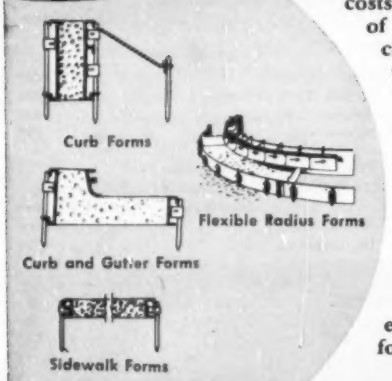
MUNICIPAL STREET SIGN CO., Inc. 777-9 Meeker Ave. • B'klyn 22, N. Y.

Get the *"Complete Package"* of BLAW-KNOX UNIVERSAL FORMS

SAVE HALF

ON CURB, GUTTER AND SIDEWALK JOBS





HERE'S the fastest way to cut concrete forming costs you ever saw. *One "Complete Package"* of Blaw-Knox Steel Forms handles *every* concrete curb, curb and gutter or sidewalk job, from simple straight work to curved or serpentine shapes. They're standardized for complete interchangeability! You can use them over and over again in combinations to meet an almost endless variety of specifications. Expensive carpentry, especially on curves, is eliminated. You save on costly materials, too. Easy to set, strip, handle and transport. Maintenance is practically nonexistent. See your Blaw-Knox distributor for additional details.

Blaw-Knox Heavy-Duty Road and Airport Forms

You get faster form setting, *always true to line and grade*, with Blaw-Knox Self-Aligning Steel Paving Forms. Available in heights of 8" or more, or in Dreadnaught Forms under 8" height. 12" x 12" Heavy-Duty Forms and Airport Paving Forms in sizes above 12" designed for the thicker slabs of modern airport runways.

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BLAW-KNOX EQUIPMENT DIVISION
PITTSBURGH 38, PA.
Offices in Principal Cities

Ask about the Blaw-Knox "COMPLETE PACKAGE" of CONCRETE PAVING and READY-MIX EQUIPMENT

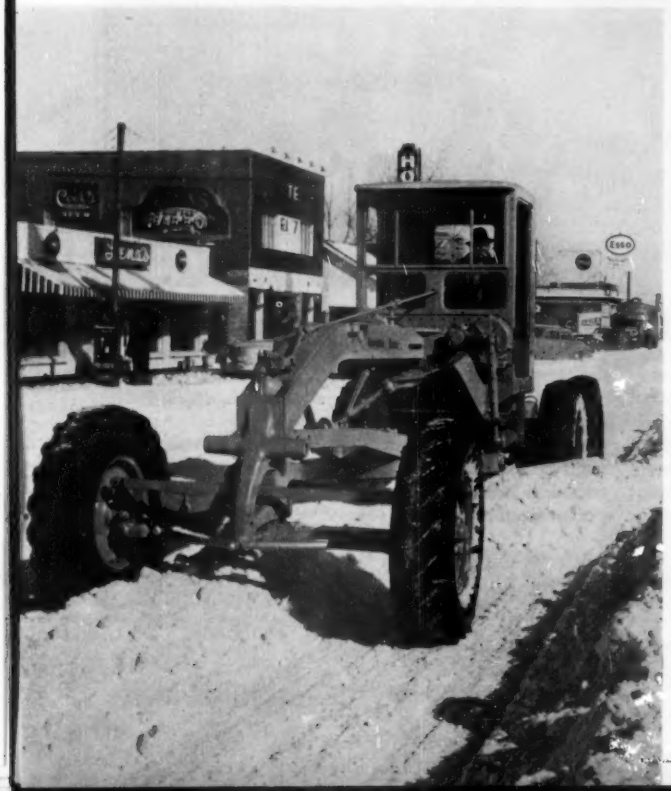
***MUNICIPAL ENGINEERS*—Cut the high cost of labor and materials with strong, versatile, easy-to-use *steel* forms. Blaw-Knox can supply you with the greatest variety of standard or special forms available. Write today for Bulletin 2259 . . . 24 pages of illustrated form set-ups and detailed instructions on how to use them for every type of work.**

In Beltsville, Md., a heavy-duty Caterpillar tractor equipped with a bulldozer blade opened the town's roads after a very heavy snowfall.

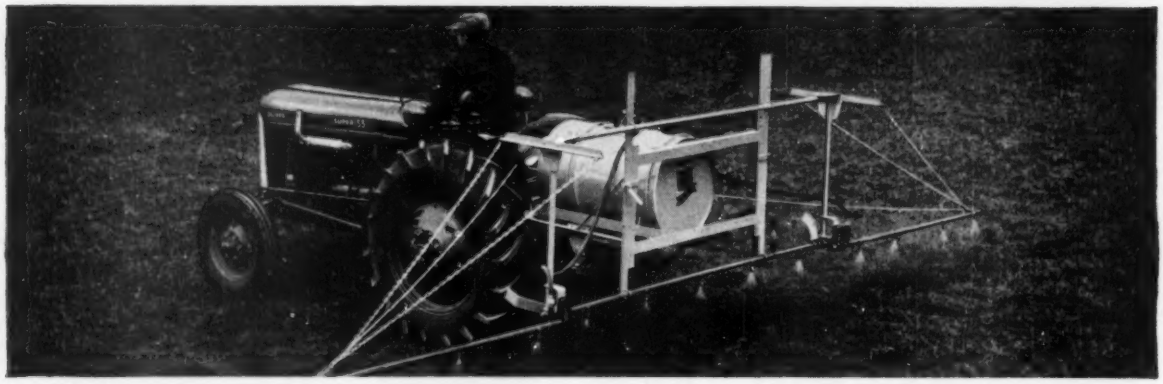
Snow Removal— Southern Style

Snow falls in Virginia more frequently than many realize. And when it falls it is soft and heavy. The two Virginia cities of Lynchburg (above) and Norfolk (below) depend upon truck-mounted Baker plows to clear snow from their streets.

(Below) West Memphis, Ark., could be mistaken for a typical Colorado town when this photo was taken. One of a pair of Caterpillar diesel motor graders windrows the snow to the center of the street, which is 120 feet wide at this point.



New OLIVER *SUPER 55 offers*



built-in hydraulics for

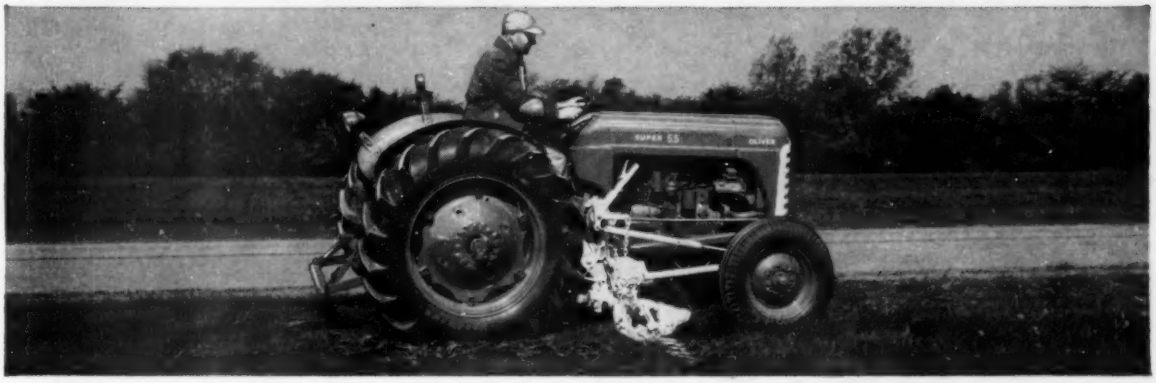
Most powerful tractor of its type!

Two husky, overhead valve engines to choose from —diesel or gasoline. Pick the fuel that fits your needs the best, cuts your costs the most.

The diesel is a *full* diesel—starts and runs on diesel fuel alone. An engine rugged and responsive, and one that takes little fuel and upkeep. And this diesel is weatherproof—easy to start no matter what the weather or how long the tractor has been idle.

Choose the gasoline, and you get an engine built to the same rugged standards of the diesel. An engine with a compression ratio of 7.0 to 1—a new high for an industrial tractor! This extra high compression means greater power on less fuel, better performance on every job.

diesel or gasoline power...



all types mounted equipment

Mounts equipment front, rear, side!

The Super 55 is a tractor you can use with all types of equipment. Its 3-point hitch with built-in hydraulic system operates a variety of Oliver and other inexpensive tools. A sturdy, one-piece front frame with convenient mounting pad makes front mounted hydraulic pumps and other equipment easy to attach, easy to remove.

See this new Oliver, check its power, handling qualities and many attachments. Check, too, its many standard features: 6 forward speeds, double-disc brakes, recirculating ball-type steering—features that make the Super 55 the most versatile, profitable tractor you can own. See your Oliver Industrial Distributor, soon!

THE OLIVER CORPORATION
400 West Madison Street, Chicago 6, Illinois

a complete line of industrial wheel and crawler tractors

194*

PENNSYLVANIA CITIES

now enjoy the everlasting satisfaction built into...

MORE cities and meters by far . . . in fact, approximately ONE THIRD more than all other makes combined! It is a wonderful tribute, not only to the superb engineering quality of two great parking meters, but especially to the excellent judgment of the Municipal Officials who head-up these 194 progressive communities in the great keystone state. When you are ready to re-meter write us for facts.

***3 cities equipped with Duncan-Automaton automatic meters.**

46,647

DUNCAN-MILLER METERS

●

DUNCAN PARKING METER CORP.

835 N. WOOD ST., CHICAGO 22, ILL. • FACTORY at HARRISON, ARKANSAS

Manufacturers of the DUNCAN-AUTOMATON fully automatic and the DUNCAN-MILLER manual parking meters

City Transit Is Everybody's Business

(*Continued from page 157*)

garages in rush hours can delay hundreds of persons for the convenience of a few. So far as possible, entrances to garages and lots should not be authorized on transit streets unless adequate space is reserved in off-street areas to accommodate all cars waiting to be garaged.

Exits only should be permitted on transit streets, and when leaving parking lots and garages, cars should be required to turn right only; never to turn left except, of course, when that is the direction of the traffic on a one-way street.

EDITORIAL NOTE: "A Plan for Transit Improvement in the Metropolitan Area of Atlanta, Ga.," can be obtained from the consultants, Simpson & Curtin, 1405 Locust St., Philadelphia 2, Pa., or from George Goodwin, Executive Secretary, of the Georgia State Senate Transit Study Committee, 1018 Mortgage Guarantee Bldg., Atlanta 3, at $5 per copy. The "Plan" includes both the report of the Senate Committee and the report of the consultant.

Canadian Community Planning Week Spurs Comment

THE recent celebration in Canada of a "Community Planning Week" spurred a variety of newspaper comment on the Planning efforts of Canadian towns and cities. In reviewing the comments, Eric Beecroft, Director of the Community Planning Association of Canada, said "the newspapers showed a high appreciation of the need for technical planning services in their communities." Mr. Beecroft cited the following excerpt from *L'Avenir du Nord,* published in St. Jerome, as being typical of the editorial comment in the smaller cities and towns:

> It will be highly advantageous if St. Jerome's municipal authorities will avail themselves of the knowledge of a technician who can dedicate his activities to the layout of a community like ours in cooperation with the city's leading authorities. To enable the body of citizens to foresee and to control the future development of the whole urban complex, to safeguard their material interests, to save their time and energy, to protect their health, and to ensure the expansion of all of their activities in joy and harmony: these are the functions of the community planner.

Noting that economic and esthetic needs for planning were stressed by many editors, Mr. Beecroft quoted the following statement from the *Owen Sound Sun Times:*

> The time is past when industrial and residential expansion can be left to the whims of individuals if the economic and esthetic interests of the community are to be safeguarded.

Concluding on the success of "Community Planning Week," Mr. Beecroft said, "The 'Week' gave us added support for the conclusion that Canadian public interest in planning is ready to become articulate and forceful."

Seminar on the Role of Universities and Colleges In Community Growth

THE Institute of Adult Education of Teachers College, Columbia University, invites teachers, administrators, and other community leaders to participate in a seminar on The Role of the University and College in Community Development, to be held on Saturdays 11 a.m. to 12:50 p.m., September 25, 1954, to January 22, 1955.

For full information address Dean Herbert C. Hunsaker at Teachers College, 525 W. 120th Street, New York 27, N. Y.

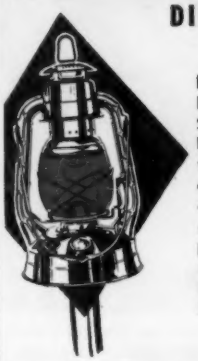
Mauch Chunk, Pa., Becomes Jim Thorpe

MAUCH CHUNK and East Mauch Chunk, neighboring municipalities on the banks of the Lehigh River in Pennsylvania, have voted to become a single community and to give up their colorful names. They will now be known as Jim Thorpe in memory of the famous Indian athlete who first won fame at the Carlisle Indian School in Pennsylvania.

Pre-Doctoral Fulbright Fellowship Available

UNDER the Fulbright program a pre-doctoral fellow may qualify to spend the academic year 1955-56 in the Netherlands, serving chiefly at the headquarters of the International Union of Local Authorities, at the Hague. Persons under the age of 35 concerned with municipal government are invited to apply. Conditions of candidacy can be ascertained from David Wodlinger, Institute of International Education, 1 E. 67th St., New York 25, N. Y.

DIETZ
SIGNALS of SAFETY

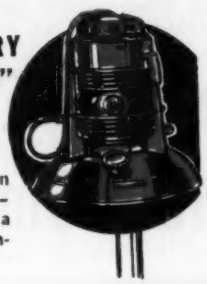


DIETZ TUBULAR LANTERNS

RED says DANGER. DIETZ LANTERNS say STOP. Light as needed, bright, or controlled without diminishment or failure till the last drop of kerosene. Rugged quality, economical performance. Backed by the oldest and largest manufacturer of portable light.

DIETZ-EMBURY "TRAFFIC-GARD" SAFETY LANTERN

"Magnified beam" seen for great distances—burns 100 hours on a pint of kerosene. Non-tip base.



DIETZ "NIGHT WATCH" SAFETY LANTERN

A miniature beacon with the new "Pencil Beam" visible from any direction close by or at long distances. Rugged, inexpensive, longest-burning, over 100 hours.

DIETZ HIGHWAY TORCHES

Complete line of bomb and flat base types in DIETZ *Blue* threaded collar burner models and DIETZ—EMBURY *Red Cam* lock burner models. Made to give faultless service under most severe conditions.

Send for Descriptive Folders

EST. R. E. DIETZ COMPANY SYRACUSE 1, N. Y. 1840

TYPE F TRAFFIC CONTROLLER at the intersection of Taft and Reading Roads reduced the number of traffic accidents from 41 in 1951 to 23 in 1953. Inspecting the controller are (left to right) R. M. Fielding, Assistant Traffic Engineer of Cincinnati, G. W. Howie, Utilities Director of Cincinnati, and C. J. Schurenberg, General Electric traffic control specialist.

General Electric Type F Traffic Controllers Help Cincinnati Move Traffic 7% Faster

INTERCONNECTED SYSTEM of Type F controllers keeps traffic moving through complicated intersections on Reading Road.

BUSES were able to cut 4 minutes off their schedules for the run on Reading Road after the Type F system was installed.

A new traffic plan in Cincinnati, Ohio, has increased the average speed of vehicles by 7% since 1951, even though vehicle registration has increased by 10% during the same period. Credit for this improvement goes to George W. Howie, Utilities Director of Cincinnati, Robert J. Stock, and Roy Fielding, who have done the electrical and design work.

G-E TYPE F CONTROLLERS play an important part in Cincinnati's traffic plan. Over 100 Type F expansible controllers are now installed on several of the more important arterial streets.

TRAFFIC ACCIDENTS on highways feeding in to the city are another problem that Type F controllers have helped solve. Reading Road, pictured, is US 25 and US 42, and also carries a large amount of traffic from suburban areas. An interconnected system of 21 Type F expansible controllers and a G-E Type F master controller on one section of Reading Road brought about a 22% reduction in accidents after the signals were installed.

COMPLETE FLEXIBILITY makes the expansible Type F controller universally applicable in the field of pre-timed traffic control, interconnected or non-interconnected. It can be installed to meet your present requirements, and later on adapted to more complex traffic problems of the future by the simple addition of accessories.

GET FULL INFORMATION from your nearest autl orized G-E Traffic Distributor or G-E Apparatus Sales Office, or write Section 453-63, General Electric Co., Schenectady 5, N. Y.

Progress Is Our Most Important Product

GENERAL ELECTRIC

(Continued from page 122)

MASSACHUSETTS

C. I. Sterling, Chief Sanitary Engineer for the State Department of Health, currently has records of three major water-supply projects in the planning stages. Attleboro (23,800) expects to build a new storage reservoir and drill new wells; Billerica (11,101) will have a new water-treatment plant. Taunton (40,109) will build a new distribution reservoir and improve its pumping station.

Sewage works projects are more active. Plans are currently being prepared for 28 treatment plants to serve 1,600,000 people. When they are built, about 82% of the state's total population will be served by adequate sewerage facilities.

MICHIGAN

Donald M. Pierce, Chief of Sewerage for the Michigan Department of Health, reports 17 sewage-treatment plants to be built or enlarged. These include plants for Bad Axe, 3,000; Benton Township, 15,000 Big Rapids, 7,000 Easton Rapids, 3,500; Essexville, 3,167; Ironwood, 12,000; Lapeer, 6,200; Manchester, 1,400; Marshall, 6,000; Mt. Pleasant, 12,000; Otsego, 3,990; Parchment, 2,000; Plainwell, 2,800; Portland, 2,800; Reed City, 2,241; St. Clair, 4,100; St. Louis, 3,350.

MINNESOTA

Twenty-seven communities in this state are currently preparing reports or plans for new sewage works. Seventeen others are in the process of constructing new facilities. Those in the preliminary stages are the following:

City	Population	Type of Project
Albany	1,200	Sewage lagoon
Cloquet	8,000	Treatment plant and interceptor sewer
Harmony	1,100	Treatment plant
Jasper	800	Treatment plant and sewer system
Partridge Lakes Development (St. Louis County)	....	Treatment plant and sewer system
Adams	800	Treatment plant
Bemidji	10,000	Treatment plant alterations
Blomkest	800	Treatment plant
Hollandale	800	Treatment plant and sewer system
Madelia	2,000	Treatment plant
New London	800	Treatment plant and sewer system
Ogilvie	800	Treatment plant and sewer system
Parkville Community (St. Louis County)	....	Treatment plant and sewer system
Plato	800	Treatment plant and sewer system
Porter	800	Treatment plant and sewer system
St. Clair	800	Treatment plant and sewer system
Sartell	800	Treatment plant
Spicer	800	Treatment plant and sewer system
Tower	800	Treatment plant
Wadena	4,000	Treatment plant alterations
Waterville	1,700	Treatment plant and sewer system

A substantial amount of work is concentrated around the Twin City area. In Richfield, construction has been completed on $2,760,000 worth of trunk sewer which will serve Richfield and a portion of Edina. When a portion of the trunk sewer in Minneapolis is completed, the system will be placed in operation.

Crystal and Golden Valley are negotiating for a joint trunk sewer to discharge to the Minneapolis system. Construction is proceeding on a $279,000 trunk sewer to connect the North St. Paul system to St. Paul. Construction also is in progress on a $1,312,000 force main and gravity sewer to provide an additional industrial waste disposal connection from the Twin Cities Arsenal to the Minneapolis System. Bonds have been voted for $8,316,000 to improve and extend sewers in St. Paul over a 7-year period.

MISSISSIPPI

Cities in this state have under consideration or in process of consideration approximately $1,000,000 worth of sewage works and approximately half this amount in water works. These affect a population of 117,800. Next year's program promises to be somewhat larger in dollar volume, according to H. A. Kroeze, Director of Sanitary Engineering for the State Board of Health.

MISSOURI

Cities in this state are scheduling for proposed construction approximately $6,500,000 water works. In addition, they have arranged financing and awarded contracts for $6,839,000 worth of sewage works.

MONTANA

Montana cities, both large and small, have been busy improving both water and sewer systems. The following, supplied by C. W. Brinck, Director of Environmental Sanitation for the State Board of Health, lists the major projects currently under way:

City	Population	Type of Improvement
Absarokee	300	Well and complete system
Billings	31,834	Filter plant addition and new mains
Cascade	447	New intake
Columbia Falls	1,232	Two new wells. (.792 each)
Ekalaka	904	New well
Great Falls	39,214	Filter plant addition. Increased pumping capacity
Kalispell	9,739	New 1.5 well
Livingston	7,863	Plant addition. Testing for auxiliary wells
Plevna	287	System extension
Winifred	217	Complete new system and well

Sewage-treatment facilities are advancing very rapidly in Montana under the impetus of the lagoon method of sewage disposal which, in many cases, is more economical in initial cost, and, in practically all cases, is more economical in operation. The state has a total of 15 communities which have surveys being prepared with reports of plans for new sewage-treatment facilities or collection systems.

NEVADA

The Las Vegas Water District is about to acquire the Las Vegas Land and Water Company for $7,500,000 that brings water from Lake Mead.

Other smaller cities in the state are building treatment plants of the "package" type. The South Reno project probably will constitute treatment facilities and sewers. Reno is now adding to its plant and Sparks is building a treatment plant. W. W. White is Director of the Division of Public Health Engineering for the State Department of Health.

NEW HAMPSHIRE

In New Hampshire, Edward F. Fitzpatrick, Senior Sanitary Engineer of the Department of Health, has found 11 cities actively working on water- and sewage-works improvements. These include the following:

Water Supply

City	Population	Project	Estimated Cost	Status
Center Ossipee	800	Chlorination	$ 6,000	To be bid
Claremont	13,000	Chlorination and distribution system	200,000	Preliminary
Dover	16,000	Filter plant	180,000	Preliminary
Hancock	250	New source	30,000	Preliminary
Littleton	5,000	Pumping station and new well	30,000	Preliminary
Newport	5,300	Chlorination, transmission line	100,000	To be bid
North Conway	2,350	Well and pumping station	25,000	Under construction
Pembroke	3,000	Well and pumping station	3,000	Complete
Pittsfield	2,000	Chlorination	8,000	Complete
Rochester	14,000	Transmission line	300,000	Under construction

Sewage Treatment

City	Population	Project	Estimated Cost	Status
Derry	5,500	Sewage system and treatment plant	$1,000,000	Preliminary

In addition, the Army's Corps of Engineers is supervising the construction of a new air base for the Air Force in the Portsmouth-Newington area. About half of the water now obtained for the City of Portsmouth will no longer be needed, as the present wells lie within the area to be used for the new base. Therefore, a new source is being developed to service both the base and replace the portion taken from the city. The cost including development of the source transmission lines, storage and chlorination treatment is estimated to be in the vicinity of $1,500,000. The air base is also developing a complete sewage system and treatment plant which will cost about $1,500,000. Both the water and sewage projects are presently under construction.

NEW JERSEY

This state will have 39 sewage-treatment plant improvements and major pumping stations according to the present program based on State Department of Health permits. Mr. Alfred H. Fletcher, Director of Environmental Sanitation for the State Department of Health, lists them according to districts:

Central District: New Jersey Turnpike Authority, Cranbury Township, sewage-treatment plant, trickling filter type; Lumberton Township (Hollybrook Sanitary Improvement Company, Inc.), partial sewer system and treatment plant; Bordentown Township (Bordentown Sewer Co.), new treatment plant, sand-bed type; (Alfred Vail Homes), additions to treatment plant; Lakehurst (1,600), new treatment plant; Mount Holly (8,500), treatment-plant additions; Asbury Park (17,500), pump stations; East Brunswick Township, N. J. Turnpike Authority, treatment plant, intermittent sand type; Lakewood (15,000), treatment-plant additions; Red Bank (13,000), treatment-plant additions.

Northern District: Bernardsville, treatment-plant additions; Branchville, dairy wastes, treatment plant; Parsippany-Troy Hills Township-Greystone Park, treatment-plant additions; Rockaway Township, treatment plant for elementary school; Morristown (17,500), treatment-plant additions; Sussex, dairy wastes, treatment plant.

Metropolitan District: Livingston Township (5,000), additions to pumping station; New Providence (3,500), additions to sewage-treatment plant; North Caldwell, treatment plants for elementary schools; Emerson Boro (2,000), treatment plant, contact aeration, sewers; Mahwah Township, Ford Motor Co., industrial waste treatment plants Livingston Township, Leemac Construction Co., treatment plant for swimming pool back-wash water; Verona (11,000), treatment-plant additions; Hasbrouck Height. (10,000), treatment-plant additions; Kearny (40,000), Koppers Co., industrial waste treatment.

Southern District: Delaware Township, N. J. Turnpike Authority, treatment plant, sand filter; Swedesboro (2,500), treatment plant; Gibbsboro, industrial waste treatment; Lower Penns. Neck Township, industrial waste treatment plant; Oldmans Township, N. J. Turnpike Authority, trickling filter plant; Salem (10,000), treatment plant; Upper Deerfield Township (Seabrook Farms), treatment plant addition; Woodbine Boro, state agencies, treatment plant; Deptford Township, partial sewer system and treatment plant, contact aeration. Bridgeton (19,000), treatment plant alterations; Delaware Township, two new plants and sewer system; Glouster City (authority) (15,000), sewers and pumping station; Greenwich Township, treatment plant and pumping station.

NEW MEXICO

One new sewage-treatment plant and five water works will get improvements, according to Harold L. Malone, Acting Director of Sanitary Engineering for this state's Board of Health. Five sewage-treatment plants are currently being built, and six others are being improved; five new water-works are being constructed and 15 others are being improved.

Two new water-treatment plants and eight new sewage-treatment plants are planned for this state during the coming year, according to Robert P. Lowe, Associate Engineer for the Department of Health. The proposed construction runs as follows:

Water Treatment

City	Population	Cost
Aztec	3,000	$100,000
Ruidoso	1,500 winter 10,000 summer	30,000

Sewage Treatment

Alamogordo	10,000	125,000
Carlsbad	25,000	.....
Farmington	12,000	325,000
Gallup	10,000	50,000
Hobbs	22,000	250,000
Santa Fe	30,000	10,000
Shiprock	1,500	15,000
State Penitentiary	1,500	40,000

In addition, about $3,200,000 worth of sewer extensions will be built in this same period, principally in the six cities of Albuquerque, Aztec, Gallup, Hobbs, Raton, and Santa Fe. The extensions in Albuquerque will amount to more than $2,500,000

NEW YORK

In New York, Earl Devendorf, Director of the Department of Health's Bureau of Environmental Sanitation, reports that nine sewage-treatment plants are currently under construction, along with 21 sewer-extension projects. However, 53 new plants are proposed for the state along with 117 proposed new sewer extensions.

NORTH DAKOTA

There are no indications of a slow down in North Dakota's municipal water and sewage-construction program. The period of June 1953 to June 1954, showed a considerable increase in the number of plans and specifications submitted for review and approva

(Continued on page 173)

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(Continued from page 171)

n that period, reports A. E. Williamson, Director of Municipal Engineering for the State Department of Health, plans and specifications for 65 separate projects were submitted. This is nearly double the number of plans submitted during the previous year. These include plans for one new water system, for six new sewage systems, and two new water-softening and treatment plants.

All of the new sewage systems will utilize sewage lagoons for final disposal and plans for six other sewage lagoons were submitted which will be used to replace existing facilities. Industrial wastes have come in for their share with waste disposal facilities for three petroleum refineries. One refinery of 30,000-barrels-per-day capacity is being constructed and it is hoped will be operating by this fall.

OKLAHOMA

In the Sooner State, Harold L. Malone of the Health Department's Division of Sanitary Engineering, records that 17 sewage-plant projects are currently scheduled for construction. Of these, eight are new plants, and nine are improvements to existing plants.

The cities of Oklahoma also are scheduled to build 25 water-plant projects during the current year. Of these five are new plants and 20 involve improvements to existing plants.

OREGON

Oregon is aiming at 13 new sewerage projects, all in cities of less than 6,000 inhabitants according to Kenneth H. Spies of the State Sanitary Authority. A detailed list of these cities is as follows:

City	Design Population	Type of Project	Estimated Cost
Carlton	1,500	New sewage-treatment plant	$ 110,000
Enterprise	2,000	New sewage-treatment plant	225,000
Gladstone	5,000	Lift station and sewer to Oregon City	.....
Glendale	1,000	New sewage-treatment plant	95,000
Gresham	5,000 (1)	New sewage-treatment plant and outfall	650,000
Molalla	2,000	Complete sewage system	300,000
Mt. Angel	2,000 (1)	New sewage-treatment plant	150,000
Newport	6,000	New sewage-disposal system	260,000
Oswego	6,000	New sewage-treatment plant	132,000
Rockaway	2,500	Complete sewerage system	265,000
Sheridan	2,500	Complete sewerage system	350,000
Toledo	3,000	New sewage-treatment plant	126,000
Vale	2,500	Sewage-disposal system	40,000
TOTAL	41,000		$2,770,000

(1) Plus capacity for industrial wastes.

At present, 68% of the state's population is served by sewage-treatment plants and about 75% by public sewers. Between 1946 and 1953 the cities in this state have built 59 plants. Mr. Spies finds sewage treatment progressing so fast that it is difficult to keep information up to date.

PENNSYLVANIA

Probably the most active stream-pollution abatement program in the nation is being undertaken by this state. Philadelphia is an outstanding example of this progress. This city's entire cleanup project is expected to cost $60,000,000, and will provide treatment for nearly 20% of the state's population.

Other examples are the three sewer authorities in Delaware County embracing 30 municipalities. One of the three plants, serving 8 municipalities, just recently went into operation. The Allegheny County Sanitary Authority project also is one of the most noted of its kind in the country. It will treat sewage from 64 municipalities, including Pittsburgh, in a single plant with a capacity of 136,000,000 gallons daily.

Recent compilations show that 129 sewage-treatment plants have been newly built or placed under construction since the Clean Streams program was begun, bringing to 406 the total number of plants in this state.

On the industrial side recent compilations show that treatment systems have been built and placed into operation, at 538 industrial plants and anthracite collieries and bituminous coal washeries. In addition, treatment systems are under construction at 123 mills and factories.

RHODE ISLAND

The nation's smallest state isn't letting size stand in the way of man-size planning. The largest sewerage project is being undertaken by the Blackstone Valley Sewer District Commission to serve about 165,000 people in the Providence area. Additional interceptor sewers planned by the District will cost $3,734,000.

Newport and the U. S. Navy are building interceptor sewers that will bring sewage to a site where a treatment plant will be built jointly by both. This will serve a population of approximately 45,000. The Navy also plans to expand sewage collection and treatment facilities at Quonset Point to serve 16,000 people, at an estimated cost of $329,000. At Cranston, a steel company is currently building a waste-treatment plant capable of handling about 129,000 gallons of metal-processing wastes daily. Walter J. Shea is chief sanitary engineer of the Department of Health.

SOUTH DAKOTA

Currently, 15 separate major water- and sewage-works projects will go into construction soon, according to R. J. Stapf, Chief, Sewage Section of the State Department of Health. This list does not include water and sewer extensions of a minor nature. It runs as follows:

City	Population	Project	Status	Cost
Aberdeen	21,051	Water storage	Authorized	.....
Brookings	7,764	Sewage-treatment plant	Bids received	$300,000
Brookings	7,764	Water-treatment plant revision	Plans complete	50,000
Canton	2,350	Sewage-treatment plant	Plans complete	.....
Gettysburg	1,555	Water storage	Bids received	9,800
Gregory	1,375	Additional supply	Authorized	.....
Hot Springs	5,030	Sewage-treatment addition	Authorized	.....
Lake Andes	1,851	Sewage-treatment addition	Plans complete	23,000
Mission	388	Sewers, lagoon	Authorized	64,000
Pierre	5,715	Water supply	Construction	15,500
Pierre	5,715	Additional water source	Construction	30,000
Madison (industr.)	.....	Sewage-treatment addition	Authorized	.....
Sturgis	3,471	Sewage-treatment addition	Authorized	48,000
Wall	556	Water-treatment addition	Construction	40,000
Whitewood	304	Sewers, lagoon	Authorized	48,000

TENNESSEE

The general cleanup of the rivers in Tennessee is making steady progress, according to the records of R. P. Farrell, Director of Sanitary Engineering for the State Department of Health. Much of the difficult work has been concentrated in the field of industrial-waste treatment; however, the leadership of the municipalities of Tennessee has greatly stimulated this work. Some of the more important of these projects, either proposed or under construction, are the following:

City	Population	Status
Bluff City	1,100	Bond proceedings for plant
Chattanooga	132,000	Interceptor construction
Clinton	3,800	Preliminary plans for plant
Columbia	11,000	Preliminary plans for plant
Harriman	6,400	Study
Johnson City	28,000	Referendum passed
Kingsport	20,000	Preliminary plans
Knoxville	125,000	Interceptor construction
Nashville	175,000	Interceptor construction
Red Bank Utility District	.....	Preliminary report
Rogersville	2,600	Preliminary report
Shelbyville	9,500	Financing
South Pittsburg	2,600	Final plans

UTAH

Six cities in Utah plan water- and sewage-treatment works for 1954 and 1955, according to Lynn M. Thatcher of the State Department of Health. The cities planning the work are the following:

City	Project
Big Cottonwood	40-mgd water-filter plant
Ogden	10-mgd water-filter plant
Heber City	1-mgd water-filter plant
Salt Lake City Suburban Sanitary District	9-mgd sewage-treatment plant, and sewers
Kanab	0.05-mgd sewage-treatment plant
Midvale	1-mgd sewage-treatment plant

VERMONT

Three new water projects are planned for this state according to Edward L. Tracy, Chief of Environmental Sanitation for the Department of Health.

Bennington (11,000) proposes to build a new well as an auxiliary supply; Springfield (5,009) also expects to drill a new gravel-packed well and build a new supply line to North Springfield. St. Johnsbury (8,000) will build a new filter plant. Plans for sewerage improvement are still not definite enough to report at present, Mr. Tracy states.

WASHINGTON

In Washington, 22 major sewage-works improvements are in the planning stages, and all but one embrace new treatment plants. According to the records of E. F. Eldridge, Director of the Pollution Control Commission, the cities laying plans for these plants run as follows:

Castle Rock, 1,255; Cathlamet, 616; Cle Elum, 2,206; Cowiche, 300; Edmonds, 2,550; Monroe, 1,556; Montesanto, 2,440; Palouse, 1,024; Pateros, 822; Quincy, 1,777; Seattle (west), 40,000; Spokane, 170,000; Sumner, 2,850; Vader, 430; Winlock, 878; Klickitat, 500; Silverdale, 400; Terrace Heights, 2,000; Vashon Island, 250; Waterville, 1,013.

The two municipalities laying plans for sewers only are Oak Harbor, 1,475; and East Mercer (sanitary district), 1,500. Eight new sewage-treatment plants currently are under construction in this state.

WEST VIRGINIA

Both water and sewage construction continues to be active in this state, according to H. K. Gidley, Director of Sanitary Engineering for the Department of Health. Although a tabulation of proposed water-works improvements is not easily available, he estimates that about $5,000,000 of such construction will be undertaken in the state between now and January 1956. Five sewage-treatment plants are currently under construction and 28 sewage projects are proposed. These run as follows:

City	Population	Project
Barboursville	1,943	Interceptor sewers and sewage-treatment plant
Berkeley Springs	1,199	Interceptor sewers and sewage-treatment plant
Buckhanon	6,016	Interceptor sewers and sewage-treatment plant
Clarksburg	32,014	Interceptor sewers and sewage-treatment plant
Dunbar	8,032	Interceptor sewers
Elkins	9,121	Interceptor sewers and sewage-treatment plant
Fairmont	29,346	Interceptor sewers
Glen Dale	1,467	Interceptor sewers and sewage-treatment plant
Huntington	86,353	Interceptor sewers
McMechen	3,518	Interceptor sewers and sewage-treatment plant
Madison	2,025	Interceptor sewers and sewage-treatment plant
Marlington	1,645	Interceptor sewers and sewage-treatment plant
Martinsburg	15,621	Sewage-treatment plant
Moorefield	1,405	Interceptor sewers and sewage-treatment plant
Morgantown	25,545	Interceptor sewers
Mullens	3,470	Interceptor sewers and sewage-treatment plant
Parkersburg	29,684	Interceptor sewers
Pt. Pleasant	4,596	Interceptor sewers and sewage-treatment plant
St. Albans	9,870	Interceptor sewers and sewage-treatment plant
Weirton	24,005	Interceptor sewers and sewage-treatment plant
Welch	6,603	Interceptor sewers and sewage-treatment plant
Wellsburg	5,787	Interceptor sewers and sewage-treatment plant
Weston	8,945	Interceptor sewers and sewage-treatment plant
Wheeling	58,891	Interceptor sewers
Whitesville	1,017	Interceptor sewers and sewage-treatment plant
Williamson	8,624	Interceptor sewers
Williamstown	3,837	Interceptor sewers and sewage-treatment plant
South Charleston	16,686	Interceptor sewers

Water-Sewage Works Costs

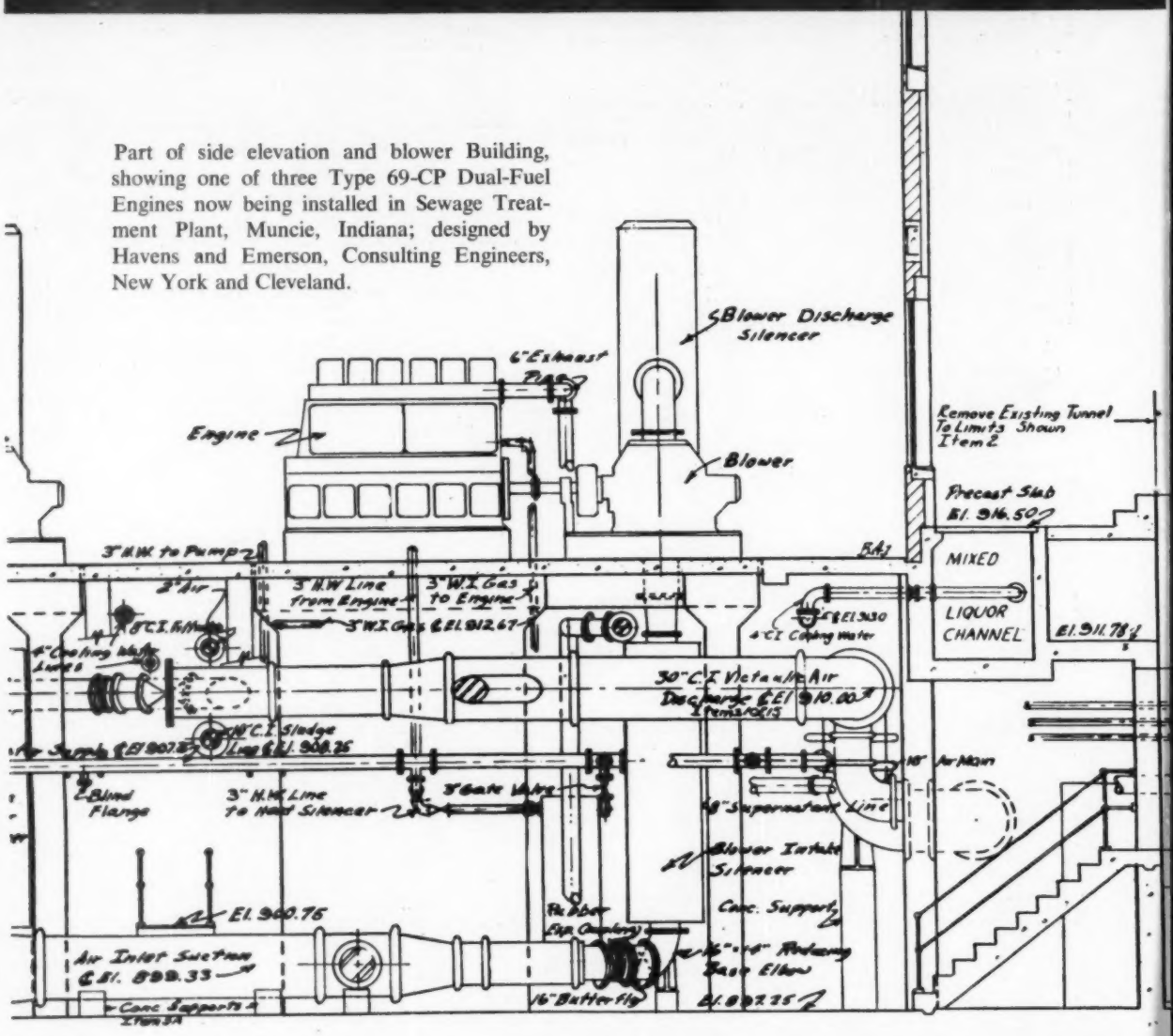
ALMOST twice as much money was spent for material and equipment, in 1952, for construction of water and sewage works as was spent for labor, reports the Water and Sewerage Industry and Utilities Division of the U. S. Department of Commerce.

Materials accounted for 48% to 54% of the total costs, and labor, 27% to 30%. Of the total spent for water-installation materials, 48% was for manufactured pipe, 4% for treatment equipment, and the remainder for sand, gravel, cement, and other costs.

Materials for sewage works represented 48% of the total expenditure. Of this, more than 30% went for piping materials, and 8% for treatment equipment.

MUNCIE, INDIANA selects 3 CP Dual-Fuel Engines

Part of side elevation and blower Building, showing one of three Type 69-CP Dual-Fuel Engines now being installed in Sewage Treatment Plant, Muncie, Indiana; designed by Havens and Emerson, Consulting Engineers, New York and Cleveland.



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If you are planning a new sewage plant or contemplating an addition to existing facilities, it will pay you to consider Chicago Pneumatic diesel, dual-fuel, or gas engines for your power units for either generator or blower drives. Chicago Pneumatic engines are the power source of many sewage treatment plants now in operation. Your consulting engineer is familiar with the advantages of CP engines.

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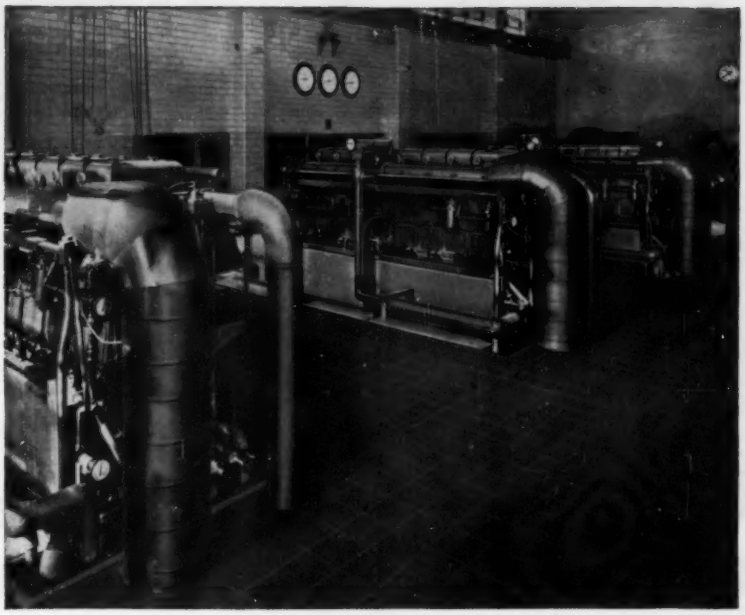
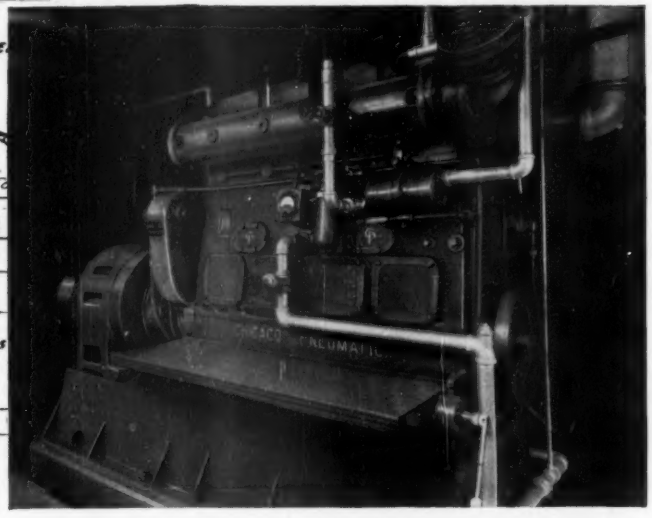


Three 306 BHP, 600 RPM, Chicago Pneumatic Dual-Fuel Engines supply power for the Rockaway, L. I. Sewage Treatment Works.



This CP Slow Speed Dual-Fuel Engine not only furnishes continuous power for the motors at Stratford's new Sewage Treatment Plant, but as a standby unit it is on duty 24 hours a day—ready to operate pumps to lift treated and raw sewage above flood tide level and to prevent street flooding in the event of power line failure.

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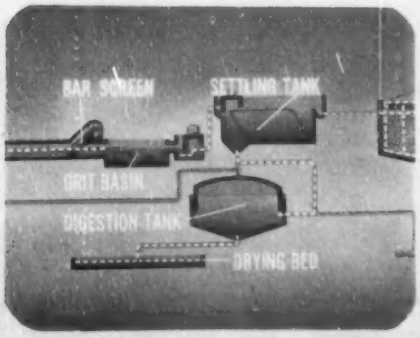
"CLEAN WATERS"



The 1954 edition of G.E.'s dramatic color movie to be premiered at October meeting of Federation of Sewage and Industrial Wastes Associations

General Electric's full color, sound motion picture, CLEAN WATERS, which forcefully illustrates the dangers of water pollution, has been completely refilmed and brought up-to-date. This public-service film points out the dangers to home, farm, and industry arising from polluted water sources, and outlines a permanent solution to the problem —modern waste treatment.

The original film—first shown seven years ago —was viewed by more than one million people throughout the world and was nationally acclaimed by community and industrial organizations who utilized it in launching campaigns to clean up their water sources.

This dramatic new edition of CLEAN WATERS can be an indispensable tool in helping you promote the increase of adequate sewage and waste treatment. It will be premiered at the annual meeting of the Federation of Sewage and Industrial Wastes Associations in Cincinnati, October 11-14. Be sure to see it. General Electric Co., Section 666-87A, Schenectady 5, N. Y.

More Power to America

GENERAL ELECTRIC

From Littered Lot to Playground

HOW America's second city is progressing in its monumental battle to eliminate its slums and renew its run?down neighborhoods is told in the August issue of THE AMERICAN CITY (pages 92-94) by Mrs. Frederick H. Rubel, Director of the Metropolitan Housing and Planning Council of Chicago.

With a few isolated private redevelopment projects acting as examples in the late 1940's, a series of impressive improvements such as the New York Life Insurance Company's spectacular Lake Meadows, and a series of public housing projects comprising over 10,000 homes were under way or approved in recent years.

Not satisfied with this, Chicago has passed laws and established new commissions, where necessary, to prevent the formation of future slums and to arrest the decline of neighborhoods threatened with blight. The official Neighborhood Conservation Commission is now the apparatus set up to coordinate the services of the various official bodies concerned with preventing slums or redeveloping them.

Over 30 private and public organizations are cooperating in this fight against Chicago's slum problem, and more are being formed to join the fight. An important activity of these neighborhood groups is the transformation of vacant lots into playgrounds, such as here shown.

Chlorinator Antitrust Action Settled

ONE of the most long-standing antitrust actions in the nation ended last July 26 by a "consent judgment" against Wallace & Tiernan. The company agreed to pay a fine of $45,000, and Builders Iron Foundry, another defendant, $8,000, when both entered *nolo contendere* pleas with the court.

The judgment against Wallace & Tiernan, a firm that has long led development in the chlorine-feeding field, requires that where engineering services are furnished in larger prospective installations, the company notify certain competitors of the fact; that it make certain patents available to other companies; and that it abandon certain other practices that the Justice Department held were monopolistic.

When the suit was instituted in 1946, the Justice Department asserted that the total domestic market for chlorine equipment was approximately $15,000,000 per year. Of this, it held that Wallace & Tiernan accounted for $14,000,000. At the time, only two other companies were making gas chlorinators: Everson Manufacturing Company, of Chicago, and Chemical Equipment Company, of California. Now competitors also include Builders Iron Foundry, of Providence, R. I., and Fischer & Porter Company, of Hatboro, Pa.

Wallace & Tiernan management considers the judgment to represent a reasonable method of resolving differences existing between itself and the government. Competitors, some of whom had evidenced bitterness, are more than happy over the settlement. Typical are the remarks of Kermit Fischer, of Fischer & Porter Company, who described the acts ruled out by the court as "monopolistic and predatory," but now states that with the help of the decrees, "fair competition will now insure . . . better, less expensive chlorination equipment."

Wallace & Tiernan management states that while the judgment imposes certain restrictions upon the business operations of its company, aside from the merits of the case, settlement in this manner will be less burdensome to the company than a protracted trial with attendant costs and diversion of executive time and attention. The company pointed out that the judgment was signed without trial of any issue of fact or law, and without admission by the parties in respect to any issue.

Employees' Sound Government Movement Proves Effective

AS A RESULT of the sort of discussion on problems of government that has been held for the past three years by the Sound Government group of Johnson & Johnson employees in New Brunswick, N. J.*, an attractive pamphlet, "Your Local Tax Dollar," has been published.

This booklet bears evidence to the fact that Sound Government members will voluntarily participate in such programs at the plant or office and that they will carry to their home community a desire to take part in government and political party affairs.

Several hundred members are active in the work of local governmental boards and civic associations. More than 50 hold elective or appointive office—mayor, councilman, tax assessor, assemblyman, township treasurer, school board member, and constable.

* See "Sound Government Gets a Boost from Industry," by William H. Baumer, chairman of the Sound Government Board of Johnson & Johnson; published on page 116 of the November 1953 issue of THE AMERICAN CITY.

City after city

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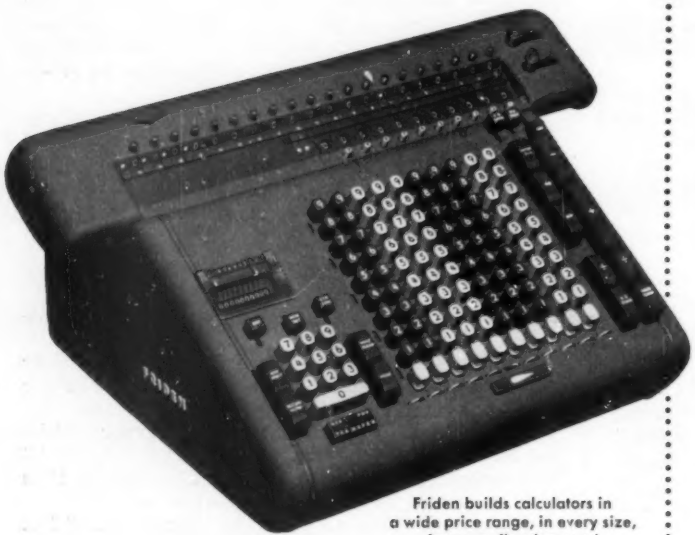

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Bureau of Water Filtration
Bureau of Accounts of Director of Finance
City Planning Commission
Department of Procurement
Redevelopment Authority
Department of Police
Police Survey Unit
Bureau of Surveys
Department of Public Health
Sewage Treatment Works
Director of Finance
Bureau of Engineering
Clerk of Quarter Sessions and Municipal Court
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Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Spot Zoning Across Municipal Boundaries

NEW JERSEY. *Borough of Cresskill v. Borough of Dumont*, 104 Atlantic (2d) 441 (Supreme Court, April 5, 1954).

In this opinion, the highest New Jersey court confirmed the decision below (reported in THE AMERICAN CITY in January 1954). The case involved the proposed establishment of a shopping center located in Dumont on a heavy travelled county highway, and near where four boroughs (Dumont, Cresskill, Demarest, and Haworth) came together — in fact, opposite frontage in each of the other three boroughs. Substantial shopping centers were available in each borough, a half mile to a mile away. All the rest of the frontage nearby was zoned residential.

The Court first refused to pass on the question of whether the several complaining boroughs were appropriate parties plaintiff, since an individual plaintiff was available who obviously had the status of a party aggrieved. The Court then went on to hold in effect that the existence of the municipal boundary lines was irrelevant in areas "where, as here, the area is built up and one cannot tell when one is passing from one borough to another." In other words, in drawing a zoning ordinance, a community is under a duty to consider not only its own problems, but the effect of its zoning regulations upon similar land which is within the same general area but located in an adjoining municipality. The Court then held that the proposed change to commercial zoning would not promote any of the statutory purposes of zoning, would be in violation of the comprehensive zoning plan for the Borough of Dumont and for the four Boroughs jointly, and represented an invalid attempt at spot zoning.

The holding that municipal boundary lines are irrelevant in such a situation is of course all to the good. Nevertheless, one wonders how under the thinking of this decision a community may decide to provide more neighborhood shopping areas near their boundaries, or elsewhere. Perhaps the key to this is the Court's brief statement that existing shopping facilities were adequate to serve demand. If so, then the New Jersey Court has established a genuine planning criterion to police these "spot zoning" cases.

Redevelopment in New York On Blighted Vacant Land and For Nonresidential Purposes

NEW YORK. *Boro Hall Corp.* v. *Impelliteri*, 128 New York Supplement (2d) 804 (Supreme Court, January 19, 1954).

NEW YORK. *Beebe Imp. Co.* v. *City of New York*, 129 New York (2d) 263 (Supreme Court, February 4, 1954).

In the *Boro Hall* case, the Fort Greene Title I project in New York was challenged as not being genuine slum clearance, and as not involving a public use. The project was proposed to clear a dilapidated slum area adjacent to downtown Brooklyn, with the cleared land to be used partly for rehousing, partly for a campus for Long Island University, and partly for an addition to a private nonprofit hospital. The condemnation was upheld by summary judgment.

In the opinion, the Court emphasized the number of governmental agencies which had passed on the plans, and stated that this case had to be considered in terms of the area as a unit, not on the condition of any one or few structures. The evidence was held to indicate only that honest differences of opinion might exist on the project; and in such a situation the determination of the local authorities was held to be conclusive. The Court also held that it was irrelevant that 4 small parcels in one block were not being taken. Finally, the Court explicitly upheld the use of part of the land for nonresidential purposes.

> The public purpose of slum clearance and rehabilitation is being served. The mere fact that the improvement contemplated is partly housing and partly university and hospital facilities is irrelevant.

The *Beebe* case involved a project in effect extending Queensview, a non-profit cooprative project sponsored by a number of leading citizens in New York City, by building 7 more buildings with 304 apartments on a 5-acre tract immediately west of Queensview, with occupancy to be limited to those with incomes under about $7,000 a year. The area in question was mostly vacant and used for storage either of steel and other construction materials or of miscellaneous rubbish, although there were two gasoline stations and a welding plant along the major street opposite Queensview and various dilapidated sheds elsewhere. The Court held that the principle question, whether this constituted a substandard and insanitary area, presented sufficiently serious problems as to require a trial on the facts.

In the opinion, many arguments cited in opposition to the project were dismissed as "entirely sham and frivolous", or as bordering "on the nonsensical". However, the more serious argument challenged as arbitrary the finding by the Planning Commission, upheld in effect by the Board of Estimate, that the tract in question is a section where substandard or insanitary conditions exist, in accordance with the provisions of certain sections of the State Constitution and the Redevelopment Companies Law. That law was held to authorize public condemnation and clearance for either one of two purposes: to provide low-cost housing (which was admittedly not involved nere), or to provide for the clearance, reconstruction and rehabilitation of substandard and insanitary areas.

The words "substandard" and "insanitary" were held to refer to slums in the traditional sense, and the Court thus squarely rejected the argument that a broad interpretation of "substandard" would include a messy vacant area which was a blight on the residential development of the neighborhood. Specifically, the Court held that a trial would be needed to determine whether the area was in fact substandard or insanitary.

> The area involved in the case at bar is at best an eyesore, and I doubt if it would be seriously contended even by plaintiff that it is not a blight on the community and a detriment to the growing residential quality of the neighborhood. But this does not necessarily mean that it is a slum or insanitary or substandard within the purview of the statute. No persons live in the area. It consists entirely of vacant land—the sheds and shacks in no sense of the word constitute improvements; the only improvements are the gasoline stations and welding plant, and these do not themselves appear to be either substandard or insanitary. I cannot regard this as a condemnation of "buildings or improvements not in themselves insanitary or substandard" because such taking is necessary for the redevelopment of a slum area, but rather deem it to be the inclusion of a modicum of such structures with an area of vacant land the acquisition of which is the primary purpose of the undertaking.

Third Tube of Lincoln Tunnel

NEW JERSEY. *Port of New York Authority* v. *Weehawken Township*, 102 Atlantic (2d) 603 (Supreme Court, March 15, 1954).

In this case, a majority of the highest New Jersey court, reversing the opinion below reported in THE AMERICAN CITY for February 1954, p. 157, held that the proposed Third Tube of the Lincoln Tunnel constituted an "additional tunnel," not merely an extension of existing facilities, and that, therefore, under the terms of the enabling legislation for the Lincoln Tunnel, additional legislative approval was required. Both majority and dissenting opinions contained interesting description of the legislative history of the Lincoln Tunnel and of traffic changes affecting its use. Two judges dissented sharply, arguing that the language could be better interpreted as saying that the original legislation authorized more than two tubes in the same general location.

Thruway Route— No Judicial Review

NEW YORK. *Alexander's Department Stores* v. *New York State Thruway Authority*, 127 New York Supplement (2d) 146 (Appellate Division, January 12, 1954).

In this case, a large department store operating primarily in central Bronx brought an action asking the court to invalidate the action of the Thruway Authority in laying out a route for the New York Thruway through the lower part of Yonkers. The Appellate Division held that the Thruway Authority's action in selecting a route was within the discretion entrusted to it by law, and (like the lower court) refused to intervene.

4th

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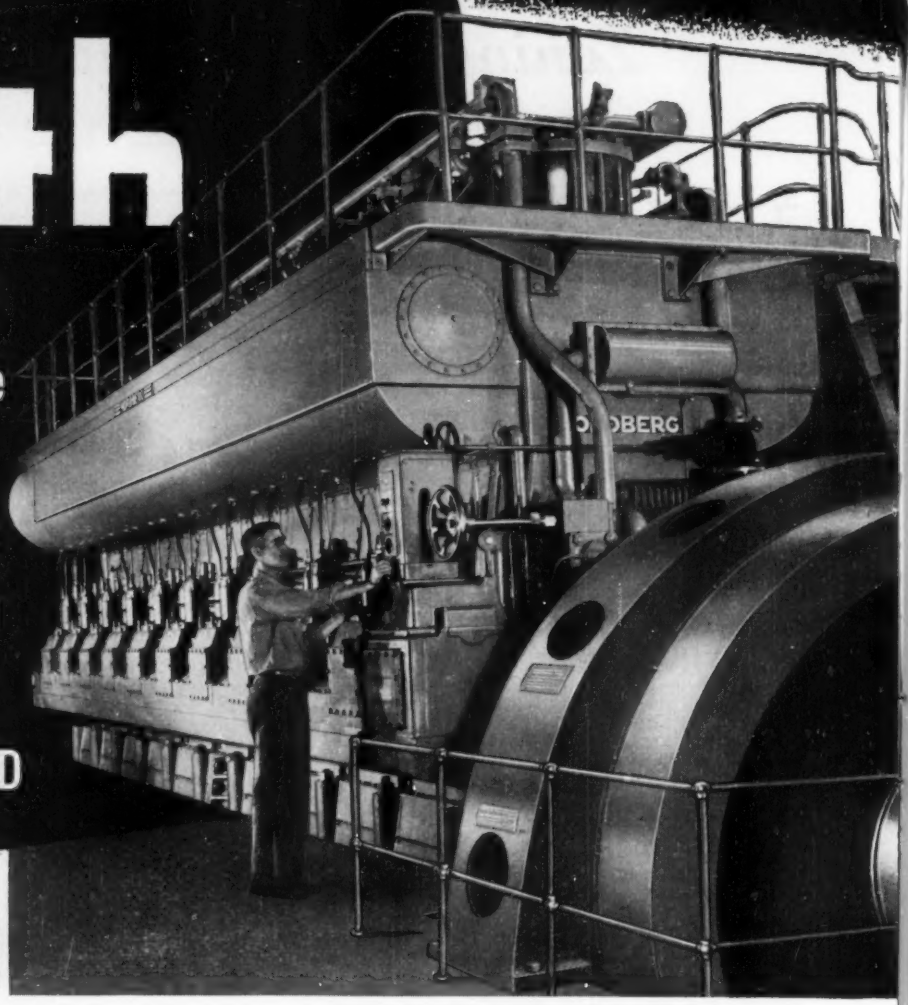

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Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Airports—Operation Is Governmental Function—City Not Liable for Fire Damage to Planes

In action against city for damages for destruction of airplanes by fire at municipal airport, held that letting of storage space for airplanes at municipal airport was governmental function and city was not liable for alleged negligence of its employees permitting airplanes to be destroyed by fire. *Imperial Production Corp.* v. *City of Sweetwater*, 210 Fed. (2d) 917 (U. S. C. A., 5th Cir., Feb. 23, 1954).

Airports—Injury to Passenger—Carrier Not Entitled to Indemnity By City—Lease Provision Controls

Where lease of airport by the City of Charlotte to air carrier required city to keep airport buildings in good repair, but expressly stated that lessee carrier was independent contractor, held that such lease did not relieve carrier from its duty of providing safe passageway for passengers to its airplanes, nor did it give rise to right in carrier to be indemnified by city for injuries sustained by passenger through negligence of carrier in performance of such duty. *Crowell* v. *Eastern Air Lines*, S. E. (2d) 178 (N. C., April 7, 1954).

Bonds for City Hall—Diversion Of Proceeds to Purchase of Land Set Aside

On petition by citizens and taxpayers against City of Bremen to rescind and set aside deed on purchase of property, held that petition asserting that bonds were voted for purpose of "constructing and equipping a city hall" and that city had contracted to use proceeds of bonds for purchase of tract of land made a case for rescission of alleged contract of purchase on theory that any use of bond funds for purpose other than constructing and equipping a city hall would be unauthorized diversion of trust funds. *Walker et al.* v. *Wheeler, Mayor et al.*, 80 S. E. (2d) 691 (Ga., Mar., 8, 1954).

Bribery of Councilman—Immaterial Whether Purpose of Bribe Fulfilled —Conviction

On appeal from conviction for bribery of alderman of City of Milwaukee, held in affirming conviction, that it was immaterial to defendant's guilt whether or not alderman was actually influenced or whether purpose of bribe was fulfilled. *State* v. *Sawyer*, 63 N. W. (2d) 749 (Wis., April 6, 1954).

Bridges—Damages to Auto from Cables Closing Entrance—City Liable

In action against city to recover for damages to automobile from collision with steel cables strung across roadway entrance of closed bridge, held, in affirming judgment against city, that concrete approach to bridge was not part of bridge within ordinance limiting speed on bridge, and plaintiff, who while on approach exceeded bridge speed limit was not thereby contributorily negligent in respect to collision with cables at entrance to bridge. *Becker* v. *City of Waterloo*, 63 N. W. (2d) 919 (Iowa, April 7, 1954).

City Property—Spread of Fire to Adjoining Area—City Not Liable

In action against city for damages to property caused by fire when city burned grass and weeds near city hall and fire spread to plaintiff's property, held that plaintiff could not recover from city on ground there was a taking and damaging of his property for public use within meaning of constitutional provision that private property shall not be taken or damaged for public use without compensation, and that burning of grass by city was governmental function. *McNeil* v. *City of Montague*, 268 Pac. (2d) 497 (Cal. App., Mar. 31, 1954).

Drunken Driving—Ordinance Prohibiting Not Denial of Due Process Or Equal Protection of Laws

On appeal from conviction for operation of motor vehicle while under influence of intoxicating liquor, held that ordinance providing that no person who is under influence of intoxicating liquor shall operate motor vehicle upon public street or highway within city, does not deny due process and equal protection of the laws, or, right to freedom and protection of property, or remedy by due course of law. *City of Columbus* v. *Mullins*, 118 N. E. (2d) 178 (Ohio App., Oct. 21, 1953).

Excavation in Sidewalk—Injury from Refilled Portion Not Actionable

In action against city and sewage and water board of city for injuries sustained in fall into alleged excavation in sidewalk, held that where excavation was refilled and tamped level with sidewalk and settled not exceeding two or three inches, defect was not such as would make city or board negligent and liable to pedestrian. *Hughes* v. *Sewerage and Water Board of City of New Orleans*, 70 So. (2d) 760 (La. App., Mar. 8, 1954).

Filling Stations — License Fees Imposed on Station and Pumps Upheld

In action by gasoline filling station operators against city to determine validity of license fee schedules of $40 per station and $7 for each pump in excess of one imposed under city ordinance, held that evidence was insufficient to overcome presumption of reasonableness of fees and validity of ordinance. *Lyons* v. *City of Minneapolis*, 63 N. W. (2d) 585 (Minn., Mar. 19, 1954).

Game — Ordinance Prohibiting Taking Of On Private Property Ultra Vires — Delegation of Authority

Where defendant was convicted of violating Township of Hopewell ordinance prohibiting any person from entering upon private property with firearm without securing consent of owner or lessee, held that ordinance was ultra vires and void since there had been no delegation of authority to Township of power to control and regulate taking of game. *Hopewell Tp.* v. *Gruchowski*, 103 Atl. (2d) 177 (N. J., Mercer Cty. Ct., Feb. 18, 1954).

Radar—Evidence of Speed Obtained By—Coupled with Nonradar Speed Device—Sufficient for Conviction

Where defendant was convicted for violation of city speed ordinance on evidence obtained by radar device, held that evidence obtained from nonradar police-car speedometer and coupled with radar-car speed indicator was legally sufficient to sustain finding of guilty by trial court. *People of City of Rochester* v. *Torpey*, 128 N. Y. S. (2d) 864 (N. Y., Monroe Cty. Ct., Dec. 1, 1953).

Sewers—Damages Caused by City Contractors from Blasting Operations

In action against contractor for City of Philadelphia for damages to buildings caused by blastings for sewer construction, held that property owners could recover as third party beneficiaries of contract between city and contractor without proof of contractor's negligence since, under contract, contractor assumed liability for all loss or damage caused by or because of sewer construction. *Keefer* v. *Lombardi*, 102 A. (2d) 695 (Pa., Jan. 14, 1954). *Reh. den.* Feb. 26, 1954).

Streets—Median Strip by State—City Consent Required — Statute

In action to enjoin state highway commission from constructing median strip in street and for damages for impairment of plaintiff's right of access to property, held that commission's construction of median strip across street without consent of City of Meridian was beyond its statutory authority and power and would be enjoined. *Hamilton* v. *Mississippi State Highway Commission*, 70 So. (2d) 856 (Miss., Mar. 15, 1954).

Strikes—Extra Policemen to Protect Bus Company's Property—City Power Upheld

In action by taxpayers to enjoin city from employing extra policemen, and expending public funds to protect bus company's property during strike, and to enjoin bus company from bringing action against city council for alleged failure to comply with franchise, held that complaint was insufficient to show abuse of city council's discretion as would entitle taxpayers to obtain injunctive relief. *Gulledge et al.* v. *Augusta Coach Co. et al.*, 80 S. E. (2d) 274 (Ga., Jan. 11, 1954). *Reh. den.* Feb. 11, 1954.

Taxation—TV Community System—State Preemption of Field—Borough Tax Void

In action by corporation engaged in receiving television signals which it distributed to others residing solely outside borough, to have franchise tax levied on it by borough declared void, held that since corporation was subject to state income and capital stock tax, borough was prohibited from taxing corporation's tower located within borough. *Panther Valley Tel. Co.* v. *Borough of Summit Hill*, 102 A. (2d) 699 (Pa., Jan. 11, 1954). *Reh. den.* March 2, 1954).

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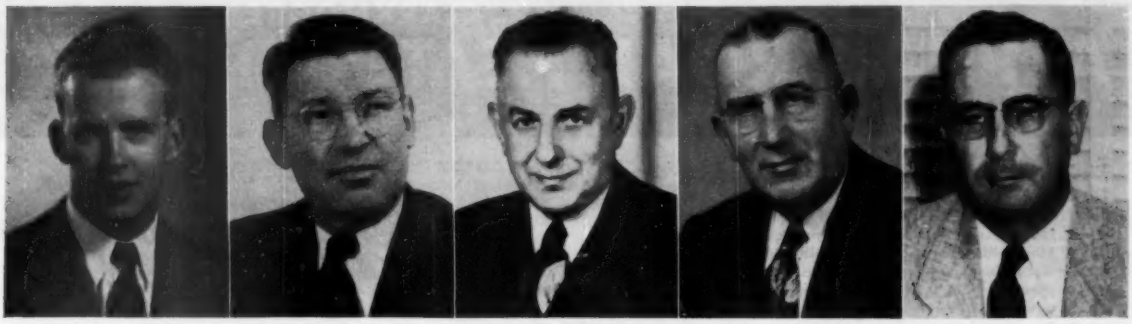
Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*



Sinclair Powell
Oakmont, Calif.

Walter Leland
Manchester, Vt.

O. M. Wiseman
Ironton, Ohio

Clarence Buckley
Milbridge, Maine

R. B. Sherrill, Jr.
Lufkin, Texas

Glendale, Ariz., has appointed WALTER C. BROWN, former manager of Chadron, to succeed E. B. Tucker as city manager.

JAMES R. BURCH, former manager of Saint Louis, Mich., has been appointed manager of Manistee, Mich., succeeding Albert Gray, Jr.

FRANK K. DAWSON, former manager of Galena, Ill., succeeds M. W. Slankard as city manager of Yuba City, Calif.

The first manager of Sanger, Calif., is DOUGLAS J. FLAUTT, one-time manager of Montrose, Colo.

Mt. Pleasant, Texas, has appointed ROBERT H. HAYES, JR., formerly assistant manager at San Angelo, to succeed Garland P. Franks as city manager.

The first manager of Camp Hill, Pa., is JOHN H. IMMEL, former manager of Penn Township, Pa.

ROBERT A. LOVELACE, former manager of Delray Beach, Fla., has been appointed city manager of Indio, Calif., succeeding R. C. O'Reilly.

The former public works commissioner at Fresno, Calif., BENJAMIN H. MEAD, was appointed first city manager of Laguna Beach, Calif.

Culver City, Calif., has appointed CLIFFORD G. PETRIE, former manager of Manhattan Beach, Calif., city manager succeeding Thomas F. Gunn.

Succeeding William J. Mount as manager of Corona, Calif., is RALPH D. PFIFFNER, formerly assistant to the council at Gardena, Calif.

The first city manager of Cordova, Alaska, is ELBERT G. RASH, formerly public utilities manager at Cordova.

Oakland, Calif., has appointed WAYNE THOMPSON, former manager of Richmond, Calif., to succeed John F. Hassler (deceased), as city manager.

The first city manager of Tracy, Calif., is ROBERT L. WILLIAMS, formerly city manager at Needles, Calif.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association

Improving the Appearance of Business Areas

CAN IT BE that the United States is really becoming civilized with respect to its appearance? Has the idea now gone beyond parks, parkways, and residential districts?

As a result of a municipal row over a huge sign proposed for the East River waterfront, Horace Havemeyer, Jr., President of the National Sugar Refining Company, has announced that his company will give $2,500 "as an initial step toward a study of the part industry can play in the long-range development and beautification of the city's industrial shore line, as distinguished from the park areas already developed."

This is the happy outcome of an episode which at the beginning boded ill for the City of New York.

The Sugar Company, maker of "Jack Frost" sugar, proposed to erect an enormous electric sign on its property on the Queensborough shore of the East River, to advertise its product. There are other large signs on buildings along the river, survivals of earlier and less careful days. The new sign was to be 205 feet long, 25 feet high, and erected 100 feet in the air. That kind of sign had been prohibited in the area since 1947, but the city's Board of Standards and Appeals had been given the power to make exceptions—the legality of which power is itself in some doubt—and by a divided vote the Board had approved of the sign.

Representatives of the United Nations, whose buildings lie on the Manhattan side of the river more or less opposite the proposed sign, Park Commissioner Robert Moses, who has the correct idea concerning advertising signs, and others protested; but so far as the Board of Standards and Appeals was concerned, in vain. Then the Citizens Union brought suit to have the Board's approval declared invalid.

Then the Sugar Company decided to give up the idea. And at the same time Mr. Havemeyer made his public-spirited offer. The survey and report are to be entrusted to Columbia University or to some other suitable independent agency.

Readers should note that the Sugar Company's proposal is a study of what commercial interests can do in an important business area to improve appearance. It follows the formation last year of an antilitter organization by can, bottle, brewing, pulp and paper, and other companies under the name: "Keep America Beautiful, Inc.," as described in the July 1954 issue of THE AMERICAN CITY. These new interests of business in that aspect of city and rural development may encourage the city's Planning Commission and other planning agencies to pay greater attention to planning for appearance, and thus restore a more rational balance between the business dollar and the beauty dollar as municipal assets.

ALBERT S. BARD, *Counsel*
National Roadside Council

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- **Eliminates corrugations on hills and at stop signs.**
- **Get's rid of troughs and ruts developed by heavy traffic.**
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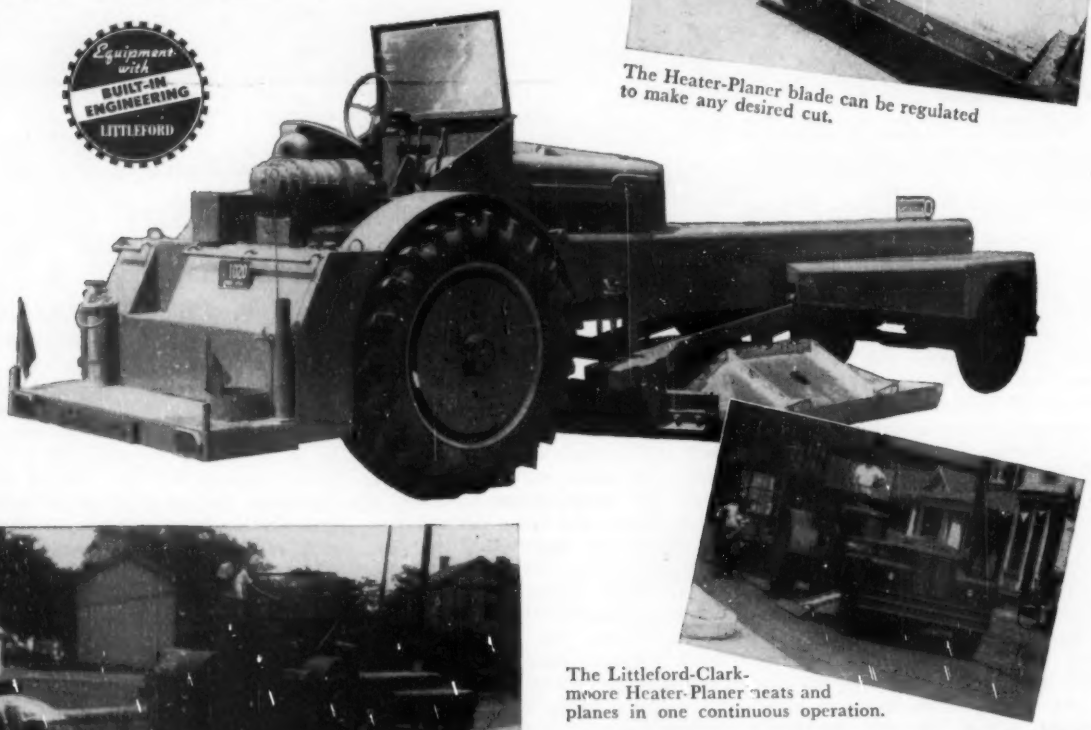

Littleford-Clarkmoore Heater-Planer planes off and windrows the material so that it can be easily shoveled into a truck. The crew works behind the Heater-Planer, not out in traffic.

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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Oct. 13-15—Cedar Rapids, Iowa
AMERICAN WATER WORKS ASSOCIATION—Iowa Section. Annual Meeting (Hotel Roosevelt). Exec. Sec., H. V. Pedersen, Marshalltown Water Works, Marshalltown.

Oct. 13-15—New Castle, Pa.
LEAGUE OF CITIES OF THE THIRD CLASS IN PENNSYLVANIA. Annual Convention (Castleton Hotel). Exec. Dir., Walter Greenwood, 302 Municipal Bldg., Harrisburg, Pa.

Oct. 14-15—Lincoln, Nebr.
DIESEL OPERATORS CONFERENCE. Annual Conference (Student Union, University of Nebraska). For information address Robert A. Ratner, Supervisor of Institutes, University Extension Division, University of Nebraska, Lincoln, Nebr.

Oct. 14-16—Point Clear, Ala.
AMERICAN CONCRETE PRESSURE PIPE ASSOCIATION. Annual Meeting (Grand Hotel). Mang. Dir., Howard F. Peckworth, 228 N. LaSalle St., Chicago 1, Ill.

Oct. 17-20—El Paso, Texas
AMERICAN WATER WORKS ASSOCIATION—Southwest Section. Annual Meeting (Cortez Hotel). Sec., Leslie A. Jackson, Municipal Water Works, Robinson Memorial Auditorium, Little Rock, Ark.

Oct. 17-20—Los Angeles, Calif.
LEAGUE OF CALIFORNIA CITIES. Annual Meeting (Biltmore Hotel). Exec. Dir., Richard Carpenter, Hotel Claremont, Berkeley 5, Calif.

Oct. 18-21—Houston, Texas
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Convention (Rice Hotel). Exec. Sec., Chief Jay W. Stevens, Pacific Coast Association of Fire Chiefs, Merchants' Exchange Bldg., San Francisco 4, Calif.

Oct. 19-22—Atlantic City, N. J.
PENNSYLVANIA WATER WORKS ASSOCIATION. Annual Meeting (Chalfonte Hotel). Sec., David Dunlap, 2609 N. Second St., Harrisburg, Pa.

Oct. 19-22—Winston-Salem, N. C.
NORTH CAROLINA LEAGUE OF MUNICIPALITIES. Annual Convention (Hotel Robert E. Lee). Exec. Sec., Mrs. Davetta L. Steed, 1009 Raleigh Bldg., Raleigh, N. C.

Oct. 22-23—Little Rock, Ark.
ARKANSAS MUNICIPAL LEAGUE. Annual Convention (Marion Hotel). Exec. Dir., Glenn Zimmerman, 416 Maple N., Little Rock, Ark.

Oct. 24-26—Fort Worth, Texas
LEAGUE OF TEXAS MUNICIPALITIES. Annual Convention (Hotel Texas). Exec. Dir., E. E. McAdams, 108 E. 19th St., Austin, Texas.

Oct. 24-26—Kansas City, Kans.
KANSAS ASSOCIATION OF MUNICIPAL UTILITIES. Annual Convention (Town House Hotel). Ass't. Sec., A. D. McGuire, P. O. Box 99, Overland Park, Kans.

Oct. 24-27—Birmingham, Ala.
AMERICAN WATER WORKS ASSOCIATION—Alabama-Mississippi Section. Annual Meeting (Tutwiler Hotel). Sec.-Treas., C. W. White, 537 Dexter Ave., Montgomery, Ala.

Oct. 25-27—Stillwater, Okla.
DIESEL POWER PLANT OPERATORS CONFERENCE. Annual Meeting (Student Union, A & M College). For information address L. Sheerer, Exec. Dir., Division of Engr. & Ind. Extension, Oklahoma Institute of Technology, Stillwater, Okla.

Oct. 26-29—Long Beach, Calif.
AMERICAN WATER WORKS ASSOCIATION—California Section. Annual Meeting (Wilton Hotel). Sec., Henry F. Jerauld, Water Department, 1040 Manzanita, Pasadena 3, Calif.

Oct. 27-29—Baltimore, Md.
AMERICAN WATER WORKS ASSOCIATION—Chesapeake Section. Annual Meeting (Sheraton Belvedere). Sec., C. J. Lauter, 6955 33rd St. NW., Washington 15, D. C.

Oct. 28-30—Memphis, Tenn.
UNITED STATES CIVIL DEFENSE COUNCIL. Annual Conference (Peabody Hotel). Exec. Sec., Mary E. Baker, 314 Hartman Bldg., Columbus, Ohio.

Nov. 3-5—Richmond, Va.
AMERICAN WATER WORKS ASSOCIATION—Virginia Section. Annual Meeting (Jefferson Hotel). Sec.-Treas., J. P. Kavanagh, 213 Carlton Terrace Bldg., Roanoke 16, Va.

Nov. 4-6—Atlantic City, N. J.
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Annual Meeting (Hotel Madison). Sec.-Treas., C. B. Tygert, Box 178, Newark 1, N. J.

***Nov. 5-6—Springfield, Mass.**
MASSACHUSETTS FEDERATION OF PLANNING BOARDS. Annual Meeting (Sheraton Hotel). Sec., Clara M. LaGlace, 81 Middle St., Gloucester, Mass.

Nov. 5-10—Chicago, Ill.
ADULT EDUCATION ASSOCIATION OF THE UNITED STATES. National Conference on Adult Education (Morrison Hotel). Pres., Paul H. Sheats, 743 N. Wabash, Chicago, Ill.

Nov. 7-9—St. Petersburg, Fla.
AMERICAN WATER WORKS ASSOCIATION—Florida Section. Annual Meeting (Soreno Hotel). Exec. Sec., Harvey Skaggs, P. O. Box 2328, Jacksonville, Fla.

Nov. 7-10—Kansas City, Mo.
NATIONAL MUNICIPAL LEAGUE. Annual Meeting (President Hotel). For information, address Alfred Willoughby, NML, 542 Fifth Ave., New York 36, N. Y.

Nov. 8-9—Asheville, N. C.
AMERICAN WATER WORKS ASSOCIATION—North Carolina Section. Annual Meeting (George Vanderbilt Hotel). Sec.-Treas., E. C. Hubbard, P. O. Box 2091, Raleigh, N. C.

Nov. 8-9—Huntington, W. Va.
AMERICAN WATER WORKS ASSOCIATION—West Virginia Section. Annual Meeting (Pritchard Hotel). Exec. Sec., H. K. Gidley, State Health Dept., Charleston, W. Va.

Nov. 9-10—Colorado Springs, Colo.
AMERICAN WATER WORKS ASSOCIATION—Rocky Mountain Section. Annual Meeting (Broadmoor Hotel). Exec. Sec., George J. Turre, Board of Water Commissioners, Box 690, Denver, Colo.

Nov. 9-11—Seattle, Wash.
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Convention (Olympic Hotel). Exec. Sec., Hal H. Hale, 917 National Press Bldg., Washington 4, D. C.

Nov. 11-13—Easton, Md.
MARYLAND MUNICIPAL LEAGUE. Annual Convention (Tidewater Inn). Exec. Sec., Ed Johnson, Box 276, College Park, Md.

Nov. 12-13—Wheeling, W. Va.
LEAGUE OF WEST VIRGINIA MUNICIPALITIES. Annual Convention (McClurg Hotel). Exec. Sec., Pat E. Maloney, P. O. Box 3141, Charleston, W. Va.

Nov. 15-17—Portland, Ore.
LEAGUE OF OREGON CITIES AND THE OREGON FINANCE OFFICERS ASSOCIATION. Annual Convention (Multnomah Hotel). Exec-Sec., Herman Kehrli, Commonwealth Hall, University of Oregon, Eugene, Ore.

Nov. 16-19—Atlantic City, N. J.
NEW JERSEY STATE LEAGUE OF MUNICIPALITIES. Annual Meeting (Chalfonte-Haddon Hall). Acting Exec. Dir., Madeleine S. Frost, 603 Trenton Trust Bldg., Trenton, N. J.

Nov. 16-20—Stillwater, Okla.
OKLAHOMA SHORT SCHOOL FOR WATER AND SEWAGE OPERATORS. (Student Union of Oklahoma A & M College). Exec. Sec., H. J. Darcey, Dir. of Bureau of Sanitary Engineering, 3400 N. Eastern, Oklahoma City, Okla.

Nov. 18-19—Princeton, N. J.
THE TAX INSTITUTE. Symposium on "Financing Metropolitan Government" (Princeton Inn). Exec. Dir., Mabel L. Walker, 457 Nassau St., Princeton, N. J.

Nov. 21-28—Tampa, Fla.
FLORIDA LEAGUE OF MUNICIPALITIES. Annual Meeting. Exec. Sec., Gordon Butler, Box 535, Jacksonville, Fla.

Nov. 28-Dec. 1—Philadelphia, Pa.
AMERICAN MUNICIPAL ASSOCIATION. Annual Convention (Bellevue-Stratford). Exec. Dir., Patrick Healy, Jr., 523 Transportation Bldg., Washington, D. C.

***Nov. 29-30—Philadelphia, Pa.**
GOVERNMENT PUBLIC RELATIONS ASSOCIATION. Annual Meeting (Hotel Bellevue-Stratford). Exec. Dir., Mrs. Pan Dodd Wheeler, Box 8260 Union Station, Knoxville, Tenn.

Dec. 2-4—Havana, Cuba
AMERICAN WATER WORKS ASSOCIATION—Cuban Section. Annual Meeting (Sociedad Cubana de Engineros). Sec., Lourence H. Daniel, Baratillo 9, Havana, Cuba.

Dec. 2-7—San Juan, Puerto Rico
INTERAMERICAN MUNICIPAL ORGANIZATION. Interamerican Congress of Municipalities. For information address Commision Panamericana de Cooperacion Intermunicipal, 351 Obispo St., Havana, Cuba.

Dec. 5-8—St. Petersburg, Fla.
INTERNATIONAL CITY MANAGERS' ASSOCIATION. Annual Convention (Vinoy-Park Hotel). Exec. Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago 37, Ill.

Jan. 10-13—New Orleans, La.
AMERICAN ROAD BUILDERS' ASSOCIATION. Annual Convention and Highway Materials and Supplies Exhibit (Hotel Roosevelt). Exec. Vice-Pres., General Eugene Reybold, World Center Bldg., Washington 6, D. C.

***Jan. 11-14—Washington, D. C.**
HIGHWAY RESEARCH BOARD. Annual Meeting (National Academy of Sciences Bldg.). Dir., Fred Burggraf, 2101 Constitution Ave., Washington 25, D. C.

***Jan. 20-21—New York, N. Y.**
NEW YORK SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Hotel Belmont Plaza). Exec. Sec., R. C. Sweeney, 21 N. Broadway, White Plains, N. Y.

***Jan. 23-27—Chicago, Ill.**
ASSOCIATED EQUIPMENT DISTRIBUTORS. Annual Meeting (Conrad Hilton Hotel). Exec. Sec., P. D. Herman, 30 E. Cedar St., Chicago 11, Ill.

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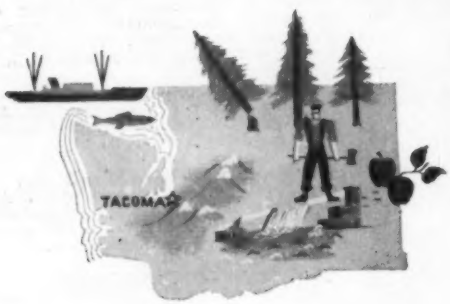

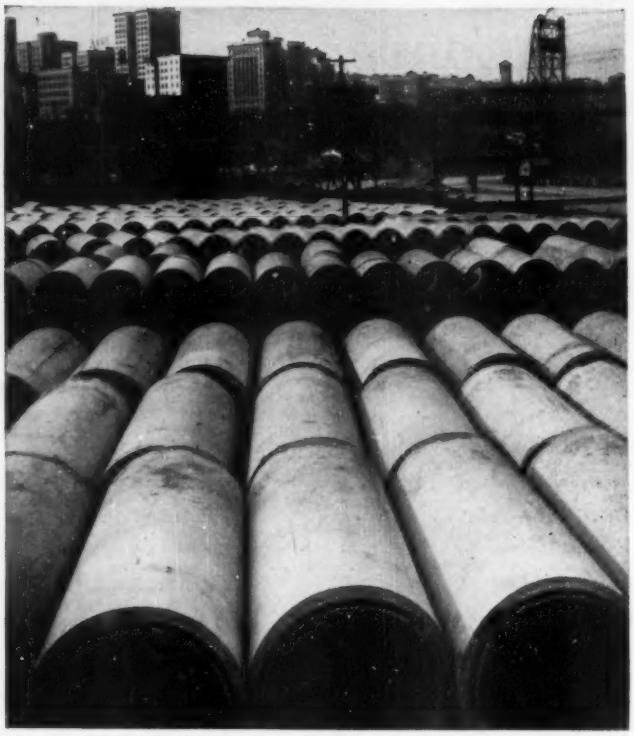

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Municipal & Civic Publications

Legal Aspects of Revenue Bonding

THE LAW OF REVENUE BONDS—*By Lawrence E. Chermak, National Institute of Municipal Law Officers, 726 Jackson Pl. NW., Washington 6, D. C.* 1954. 236 *pp.* $5.

This work sets forth the basic concepts of the law surrounding the issuance of revenue bonds by states and local public corporations. It provides a ready access to citations of the cases and writings embracing this field of law. It will be helpful to municipal administrators and especially to city and town attorneys who engage in bonding work only on infrequent occasions, for the book presents a comprehensive survey of all the legal aspects of the proceedings covering the issuance of revenue bonds.

The principal chapter headings are as follows: Table of Cases; Units of Governments Issuing Revenue Bonds; Local Government Limitations; Power to Issue Revenue Bonds; Purposes for Which Revenue Bonds Are Issued; Security; Authorization of Bond Issues; Content of Revenue Bonds; Construction and Revenue Funds; Rate Resolution and Rate Covenants; Other Covenants; Redemption of Bonds; Remedies; Sale, Award and Distribution of Bonds; Conclusions.

Revitalizing Older Business Centers

ECONOMIC AND LEGAL ANALYSIS, PERIMETER PLAN FOR ENGLEWOOD PLAZA—*Prepared by Real Estate Research Corporation, 73 W. Monroe St., Chicago 3, Ill.* 1953. 110 *pp.*

The literature on revitalizing older, in-town shopping centers is slowly beginning to develop. Here is the most detailed study of the economic and legal aspects of redesigning an existing shopping center to come along. The particular center under discussion is the Englewood Plaza business area, lying southwest of the Loop in Chicago. A "Perimeter Plan" to provide better traffic access and sufficient off-street parking, prepared by the Chicago Planning Commission, is thoroughly analyzed.

Costs for carrying out the plan are presented. Similarly, there are discussions of methods for acquiring needed land and for financing the plan.

Data Book for Engineers

FIELD PRACTICE, DATA BOOK FOR CIVIL ENGINEERS, Vol. III.—*By Elwyn E. Seelye. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y.* 394 *pp.* $7.50.

A convenient handbook for every engineering office handling a general line of construction work. It embraces concrete, masonry, structural steel, welding, bridges, foundations, wood and timber, piles, soils, bituminous paving, and other construction activities and gives helpful data on construction surveying practice.

Economic Survey of Land Uses

ECONOMIC SURVEY OF THE LAND USES OF FAIRFAX COUNTY, VA.—*By Homer Hoyt Associates, 3636 16th St. NW., Washington 10, D. C. June* 1954. 72 *pp.*

This survey analyzes the present and future economic opportunities in Fairfax County, discusses the balance between tax revenues from different types of land uses and the costs of supplying municipal services to such uses, and suggests types of uses that will be most beneficial to the county in its future growth.

Included among the chapters are: Effect of Growth of Fairfax County on Assessments, Tax Rates and County Budgets; Retail Sales in Fairfax County 1953 and the Prospective Volume of Retail Sales in the County 1960, 1970-1980; Number of School Children in Fairfax County and School Requirements 1953-1980; Desirable Types of Industry for Fairfax County and Their Effect on the Tax Base of the County.

Panel Discusses Traffic

THE CITY TRAFFIC MUDDLE—WHAT EXISTS?—*National Highway Users Conference, National Press Bldg., Washington 4, D. C.* 1954. 24 *pp.*

At the Fifth Highway Transportation Congress, held in Washington, D. C., May 4-6, 1954, four traffic experts from various parts of the country gave their answers to the traffic problem. The experts and their respective reports, here reproduced, are as follows:

Henry A. Barnes, Director of Traffic, Baltimore, Md.—Using Existing Facilities.

Glenn C. Richards, General Superintendent, Department of Public Works, Detroit, Mich.—Need for Expressways.

Dewitt C. Greer, Texas State Highway Engineer—City-State Relationships.

Mayor David L. Lawrence, Pittsburgh, Pa.—Regulation and Community Action.

Appraisal of Planning Education

URBAN PLANNING EDUCATION IN THE UNITED STATES—*By Frederick J. Adams. The Alfred Bettman Foundation, Cincinnati, Ohio.* 1954. 58 *pp.* $2.

This report is concerned mainly with the present status and adequacy of professional education and research in the field of urban planning. The objectives and scope of urban planning are discussed, as are the planning goals that should be sought and the manner in which the professional planner can contribute most to the attainment of these goals.

Detailed descriptions of the planning courses offered in colleges and universities throughout the country are presented. Comments by graduates of planning schools on their training are analyzed, as are comments by employers about planning-school graduates.

Labor Relations in Canadian Municipalities

MUNICIPAL LABOR RELATIONS IN CANADA—*By S. J. Frankel and R. C. Pratt, Canadian Federation of Mayors and Municipalities, Suite M-16, Mount Royal Hotel, Montreal 2, Quebec.* 1954. 87 *pp.* $2.50.

This is a study of problems of collective bargaining between municipalities and municipal trade unions in Canada. The book analyzes the growth of municipal trade unions; collective bargaining problems involving policemen and firemen; provincial legislation affecting municipal labor relations; municipal representation at the bargaining table, proper criteria for wage proposals, and compulsory arbitration.

Power Project Described

ST. LAWRENCE POWER—*New York State Power Authority (Robert Moses, Chairman, 270 Broadway, New York, N. Y.).* 1954. 47 *pp.*

The project described in this report is a system of dams and channel enlargement for the generation of power; however, these works at the same time will increase depth and reduce velocity, thus permitting navigation by ships of 27-foot draft through certain reaches of the river. Other agencies are to construct the "seaway" which will complete the navigation facilities by a system of locks and canals.

A summary of the complete technical report prepared by Sanderson & Porter and Uhl, Hall & Rich, working with Hydro-Electric of Ontario engineers, appears in this brochure. In addition, there are: an easy to understand financial section, and summaries of the reports of site planning and architectural consultants and of the atomic power committee.

Record Keeping in Recreation Departments

MANUAL ON RECORDING SERVICES OF PUBLIC RECREATION DEPARTMENTS—*Prepared by Committee on Statistics for Public Recreation. Issued by Social Statistics Project of Community Chests and Councils of America, Inc., 345 E. 46th St., New York 17, N. Y. (In cooperation with the American Recreation Society and National Recreation Association.)* 1954. 21 *pp.*

Most communities having active recreation programs keep statistics on the services they provide, such as the number of children taking part in summer playground activities, etc. For the recreation leader who is somewhat in the dark about how to keep such data or who wants to improve the method he is already using, here is an excellent booklet developed by leaders in the recreation field. The contents include: Monthly Report Form for Public Recreation Services; Instructions for Use of Monthly Report Form; Suggested Report and Record Forms and Procedure; Special Facilities—Daily Report and Form.

Municipal Nonproperty Taxes in Michigan

PAPERS ON MUNICIPAL NONPROPERTY TAXES IN MICHIGAN—*By Arthur M. Wisehart, The University Press, Ann Arbor, Mich.* 1954. 94 *pp.* $2.

More and more communities are turning to nonproperty taxes as a means of raising additional revenues without placing greater burdens on local real property. These two papers, recently published by the Institute of Public Administration of the University of Michigan, deal with the use of admissions and income taxes as supplemental local revenue sources.

Paper No. 1, on the admissions tax, is divided into four basic sections: Introduction; Present Use of the Admissions Tax as a Source of Revenue, Admissions Tax in Michigan Municipalities; Legal, Administrative, and Political Facilitation of the Municipal Admissions Tax in Michigan.

The paper on municipal income tax is organized as follows: Chapter I, Present Use of the Municipal Income Tax; Chapter II, Form and Coverage of the Tax; Chapter III, The Legal Basis for Municipal Income Taxes in Michigan; Chapter IV, Administration of the Municipal Income Tax; Chapter V, Conclusion.

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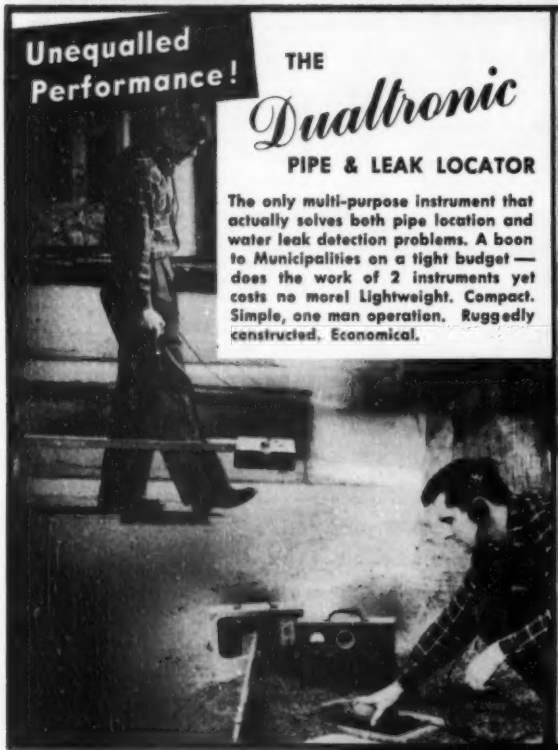

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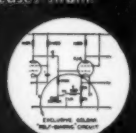

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Proceedings of Industrial Defense Conference

BUSINESSMEN'S CONFERENCE ON INDUSTRIAL DEFENSE IN THE ATOMIC AGE—*Manufacture Department, Chamber of Commerce of the United States, Washington 6, D. C.* 1954. 68 *pp. Single copy,* $1. *Additional copies,* 50 *cents each.*

These proceedings of the June 15, 1954, Conference on Industrial Defense contain papers presented by top men in the nation's defense efforts. Hon. Donald A. Quarles, Assistant Secretary of Defense for Research and Development, and Val Peterson, Administrator, Federal Civil Defense Administration, were the main speakers in the morning session. Dr. Arthur Flemming, Director of the Office of Defense Mobilization, spoke at the luncheon session. Lieut.-Gen. Willard S. Paul, U. S. A., Ret., Charles F. Honeywell, Administrator of Business and Defense Services Administration, and John Redmond, Assistant Production Manager of Koppers Co., were the afternoon speakers.

New Industry in Small Towns

THOSE NEW JOBS IN AMERICAN TOWNS—*By Donald S. Stroetzel. Reprinted from the May, June, and July issues of* Pathfinder, *the* Town Journal. 1954. 6 *pp. Single copies will be sent free to our readers upon application to Promotion Production Dept.,* Town Journal, *Washington Square, Philadelphia* 5, *Pa. Special quantity prices.*

This series on the trend of industry to locate in smaller towns contains information received from mayors of 1,000 non-suburban small municipalities. More than half of these towns have more factories today than in 1947 (only 5% have less), and generally there is a big increase in the number of local factory jobs. This information is analyzed from economic and social angles and from various points of view, and advice is given on the kind of industry to encourage and on how to attract this business.

1953 National Planning Conference

PLANNING—1953. *Proceedings of the Annual National Planning Conference, held at Detroit, Mich., October* 11-15, 1953. *American Society of Planning Officials,* 1313 *E.* 60*th St., Chicago* 37, *Ill.* 262 *pp. Available to members of the Society.*

Papers presented at the more than 20 different sessions of the 1953 National Planning Conference, held in Detroit, are contained in this volume.

The keynote address by Otto L. Nelson, Vice-President of the New York Life Insurance Company, called for major surgery in major cities and urban areas to prepare them for their greater future importance in our national existence. General Nelson also stressed that such surgery should be carried out immediately, since procrastination and half-hearted measures endanger our national security in this atomic era.

An interesting session on Urban Esthetics pointed up the importance of greater attention to the looks and attractiveness of urban areas. Two points of view regarding the effectiveness of written civil service tests for city planning positions were presented in a session titled: "Are Civil Service Examinations for Planners Successful?"

Other discussions included the following topics: Planning Organization for a Metropolitan Area; Metropolitan Toronto: A New Answer to Metropolitan Area Problems; Moving People in Urban Areas; Urban Conservation; Planning Industrial Districts; Modernizing Our Zoning.

Metropolitan Government —Planning Bibliography

METROPOLITAN GOVERNMENT AND PLANNING: A SELECTED BIBLIOGRAPHY—*Prepared by the Joint Reference Library for The American Municipal Association,* 1313 *E.* 60*th St., Chicago* 37, *Ill. May* 1954. 33 *pp.* $1.

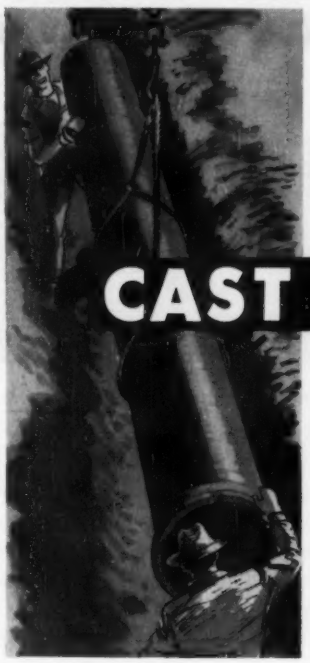
This bibliography is intended to be helpful to persons seeking better methods of managing the modern metropolis. Books and articles are classified under two general headings: Metropolitan Government and Metropolitan Planning.

Under the first heading there are the following subheadings: Borough System, Authorities and Special Districts, Annexation, Decentralization, City-County Consolidation, and Geographic Breakdown, the last consisting of publication listings by states. Except for a small number of books and articles, all listings in the Metropolitan Planning section of the bibliography are grouped according to states and cities.

Recent Local Tax Laws

LOCAL TAX LEGISLATION, 1952-1954 — *The July-August* 1954 *issue of* Tax Policy, *published by Tax Institute, Inc.,* 457 *Nassau St., Princeton, N. J.* 16 *pp.* 50 *cents.*

The topics covered in this issue on local taxes include: state legislation enabling local governments to impose certain taxes; tax sharing; taxes on admission and amusement, alcoholic beverages, fuel, gasoline, hotel, income, insurance, license, motor vehicles, poll, property, real-estate transfer, residence, sales, use, and gross receipts, tobacco and utility.



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Suggested Policies to Limit Recessions

DEFENSE AGAINST RECESSION: POLICY FOR GREATER ECONOMIC STABILITY—*A Statement on National Policy by the Research and Policy Committee of the Committee for Economic Development,* 444 *Madison Ave., New York* 22, *N. Y. March* 1954. 53 *pp. Single copy, free; additional copies,* 25 *cents each.*

PROBLEMS IN ANTIRECESSION POLICY—*A Supplementary Paper to the Foregoing. September* 1954. 161 *pp.* $1.

The statement: "Defense Against Recession," is one of a series issued by the Committee for Economic Development, dealing with the problem of achieving greater economic stability. After analyzing the likely characteristics that a future recession might take, the report offers a number of suggested policies for business and governmental action to reduce economic fluctuations.

State and local governments are urged to set aside reserves in their annual budgets for future capital improvements. Obsolete debt limits that would be obstacles to the continuity of capital spending in periods of recession, should be revised, according to the report.

Capital budgets of permanent improvement projects to be carried out over the next several years are suggested to maintain the volume of state and local construction during economic fluctuations. The maximum weekly amount of unemployment benefit should be raised in many states, and the maximum duration of benefits should be lengthened according to the report.

Of primary interest to municipal officials in the Supplementary Paper are the following: "Stabilizing State and Local Finance," "Public Works and Economic Stabilization," "Budget Policy to Maintain Stability," and "Contracyclical Aspects of Private Residential Building."

Directory of Public Administration Organizatons

PUBLIC ADMINISTRATION ORGANIZATIONS: A DIRECTORY, 1954—*Editor, Frank B. Cliffe. Public Administration Clearing House,* 1313 *E.* 60*th St., Chicago* 37, *Ill.* 1954. 150 *pp.* $2.50.

This is the seventh edition of this valuable directory, which describes over 500 national organizations that are interested in public administration and the problems of government. Among the types of organizations listed are citizen groups, societies built around professions or techniques important in some particular phase of public administration, and organizations of public officials. Each listing contains information concerning the membership, finance, secretariat, activities, affiliations, and publications of each organization.

How to House and Design An Exhibition

NEW DESIGN IN EXHIBITIONS — *By Richard P. Lohse. Frederick A. Praeger, Publishers,* 105 *W.* 40*th St., New York* 18, *N. Y.* 1954. 260 *pp.* $13.50.

This book on modern exhibition architecture and techniques presents examples of the finest work of architects and artists in the United States, England, France, Italy, Germany, Holland, the Scandinavian countries, and Switzerland, during the past 20 years. More than 600 photographs, plans, and structural details complement the text to describe fully the best examples of modern exhibition techniques. The major portion of the book illustrates national, industrial, small manufacturing, scientific, cultural, social, and political exhibitions of many types.

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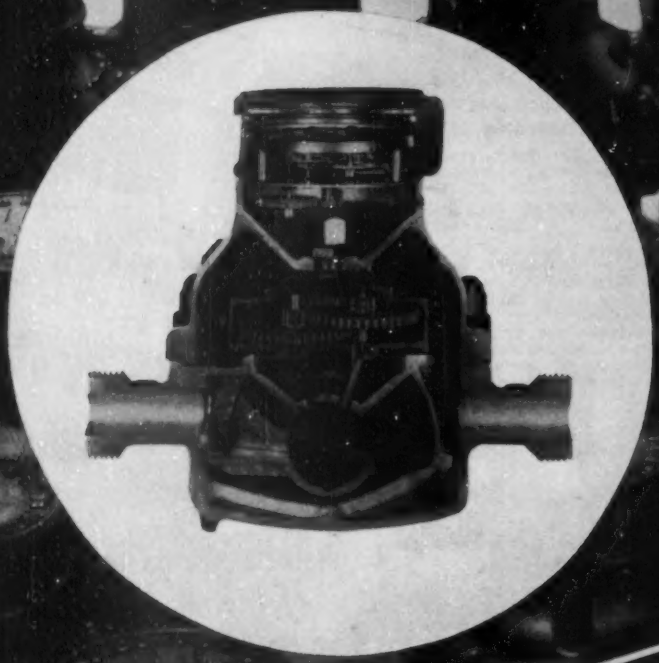

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How to Form a Citizens' Housing Association

BUILDING A CITIZENS' HOUSING ASSOCIATION —*By Alexander L. Crosby. National Housing Conference, 1129 Vermont Ave. NW., Washington 5, D. C. 1954. 32 pp. One copy, 50 cents; 10 or more copies, 40 cents each; 100 copies or more, 30 cents each.*

If you are thinking of forming a citizens' housing association in your community to help your municipal officials clean up existing slums or to prevent other areas from deteriorating, here is a popularly written handbook that will help you get off to a flying start. Beginning with a short explanation of the need and importance of such associations, the booklet tells how to organize an association, how to conduct a first meeting, what to do to launch your program, what your objectives might be, and how to get the facts about housing problems in your town. Finally, the booklet presents a summary of the activities of citizens' housing associations in six cities over the nation. A brief form for the by-laws of an association is presented.

New Housing Yearbook

THE HOUSING YEARBOOK, 1954 — *The National Housing Conference, 1129 Vermont Ave. NW., Washington 5, D. C. 1954. 72 pp.* $3.

The first issue of Housing Yearbook includes basic data that will be valuable to all concerned with housing. It studies America's housing needs for the next 15 years, discusses the finances of public housing, pleads for more public housing —especially for middle-income families, recommends new trends in architectural design and in city planning, and considers slums and urban redevelopment. It includes a Who's Who in U. S. housing agencies, and tells how members of the 83rd Congress have voted on housing since 1949. Another interesting feature is the response of 40 civic leaders, businessmen and public officials to the question: "How Should Low-Income Families Be Housed?"

Recreation Programming

THE RECREATION PROGRAM — *Published by The Athletic Institute, 209 S. State St., Chicago 4, Ill.* $3.

This book deals with the "heart" of the recreation effort—the planning and setting into motion of the kinds of recreation activities that will fulfill the interests of the groups to be served. While the contents of the book do not exhaust all of the considerations involved in providing recreation programs, they should serve as an effective springboard to more imaginative recreation programming.

Chapter headings include: Recreation—Its Nature and Significance; Factors in Planning Recreation Programs; Arts and Crafts; Dance; Drama; Games; Sports, and Athletics; Hobbies; Music; Outdoor Recreation; Reading, Writing, and Speaking; Social Recreation; Special Events; and Voluntary Service.

Chapters concerning specific recreation activities contain material on such factors as the values obtained from the activity, the organization of a program for the activity, the facilities needed for the program, and the kind of leadership needed.

The book is the outcome of the Second National Workshop on Recreation, held at the Kellogg Center for Continuing Education, Michigan State College, November 28 to December 8, 1953.

Structural Design Techniques

DESIGN IN STRUCTURAL STEEL—*By John E. Lothers. Prentice-Hall, Inc., 70 Fifth Ave., New York 11, N. Y. 454 pp.* $10.

A comprehensive text embracing the design of various types of simple connections; the "bracket" method of treating eccentric connections, both riveted and welded; and a thorough base-plate analysis. The author introduces his method of designing column-base plate connections to resist moments, and he also analyzes the problems connected with designs for tall buildings.

Annual Report of Metropolitan Government of Tokyo

TOKYO — *Compiled by Planning Section, Administrative Planning Division, General Affairs Bureau, Metropolis of Tokyo, 1, 3-chrome, Marunouchi, Chiyoda-ku, Tokyo, Japan. 1953. 67 pp.*

This illustrated booklet tells the story of the activities of the Metropolitan Government of Tokyo during the 1952-53 fiscal year. With an effective presentation and an easy-to-read text, the publication has chapters on the governmental organization of metropolitan Tokyo, finance, planning, public relations, education, social welfare, health and sanitation, labor administration, commerce and industry, construction and housing, traffic, water supply and sewerage, and public safety.

The booklet reports that of the 1,377,000 houses in the Metropolis before the war, 767,000, or slightly more than half, were destroyed by bombings, etc. Between 1946 and 1952, however, 652,000 new dwelling units were constructed.

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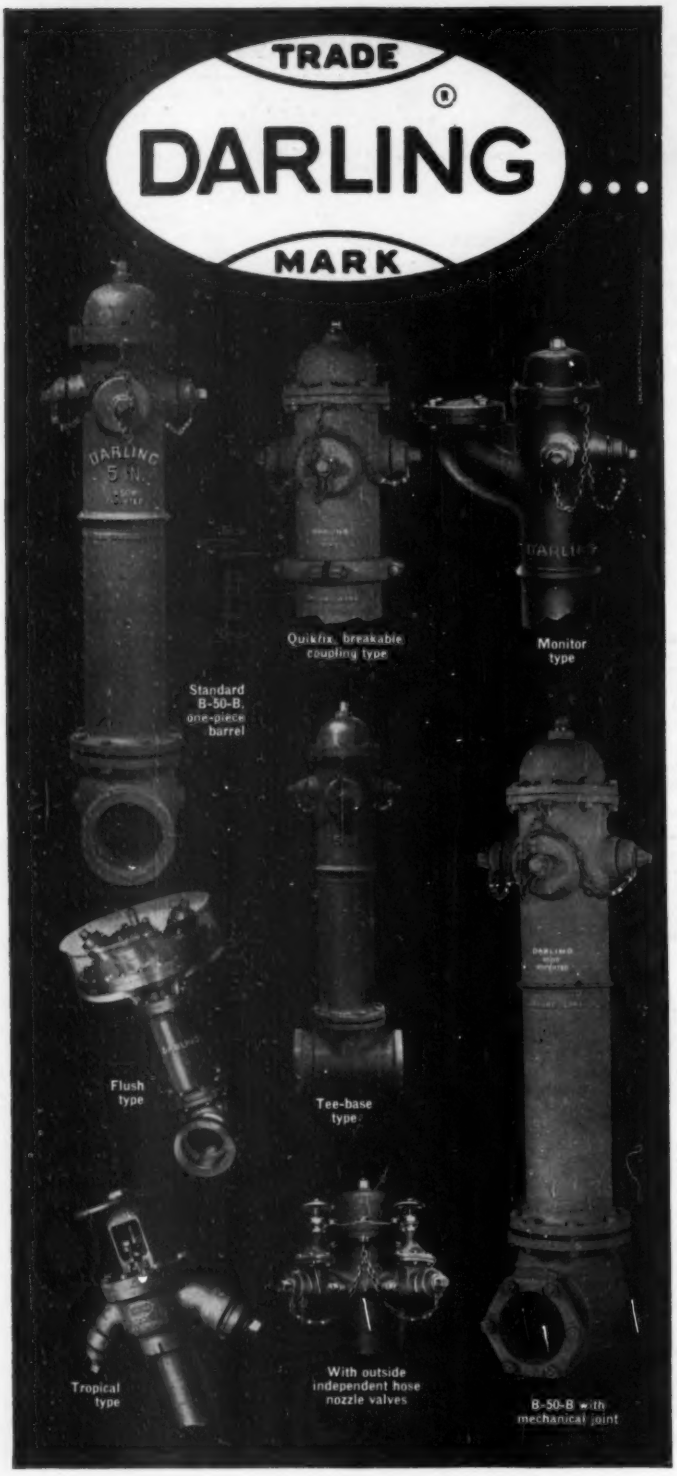

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How to Plan Residential Subdivisions

PLANNING RESIDENTIAL SUBDIVISIONS — *By V. Joseph Kostka. June* 1954, 127 *pp.* $3.50. *Copies can be purchased from V. Joseph Kostka, School of Architecture, University of Manitoba, Winnipeg, Canada.*

With subdivision activity proceeding rapidly throughout the United States and Canada, Professor Kostka's new book on subdivision planning is a timely one. This is a volume that will be helpful to a wide range of readers—architects, planners, engineers, real estate businessmen, etc. It should be especially worthwile reading for members of planning commissions who must review subdivision plans for their communities.

The book is divided into three parts. Part One describes in detail the elements of a site survey for a properly laid-out subdivision. Part Two deals with site design and development and is divided under the following headings: The Community Planning Aspect; The Engineering Aspect; The Landscaping Aspect; The Architectural Aspect; and Professional Services. Part Three presents examples of western Canadian subdivisions.

Zoning Controls for Swimming Pools

PRIVATE SWIMMING POOLS AND CLUBS — *Planning Advisory Service Information Report No.* 35. *American Society of Planning Officials,* 1313 *E. 60th St., Chicago* 37, *Ill. August* 1954. 28 *pp. Available only through annual subscription to the Service.*

This report summarizes basic information on swimming pools, their construction and design, location and maintenance. Suggested zoning controls are presented for the variety of swimming pools that are being developed today. Among the regulations that should be considered, the report suggests the following: approval of structure and water recirculation equipment by state swimming-pool inspectors, the fencing and screening of pools from abutting properties, the establishment of minimum distances of pool borders from all property lines, the placing of pumps and filters at stated minimum distances from abutting properties, the restriction of signs and sales at nonprofit clubs, the shielding of floodlights to reduce glare, and the approval of private water supplies.

Planning Techniques for Florida Municipalities

COMMUNITY PLANNING AND DEVELOPMENT— *Proceedings of the 7th Florida Municipal and Public Health Engineering Conference, March* 9-10, 1954. *In Engineering Progress at the University of Florida, Vol. VIII, No.* 5. *Published by Florida Engineering and Industrial Experiment Station, College of Engineering, University of Florida, Gainesville, Fla. May* 1954. 56 *pp.*

Florida is the fastest growing state east of the Mississippi River at the present time, and this rapid development is creating serious sanitation problems in and around new residential subdivisions. Therefore, the conference that this booklet reports was given over to a discussion of the problem and to analyzing possible solutions.

Papers with such headings as the following are included in the report: "Fringe Area Sanitation Problems in Florida;" "How Another State Has Approached the Subdivision Problem;" "Sewerage Problems in Residential Subdivisions—A Realtor's Viewpoint;" and "Recommendations for Improved Community Planning and Development Programs." A total of 17 papers are included in the report.

Planning in Italy

URBANISTICA No. 14 — *Published by the Italian Town Planning Institute, Torino, Italy. Available from Editorial Department,* THE AMERICAN CITY, 470 *Fourth Ave., New York* 16, *N. Y.* $3 *per copy.*

Beautifully illustrated historical studies of the smaller towns that dot the countryside surrounding Rome are included in this latest issue of this superior Italian planning magazine. The characteristics of the island towns surrounding Venice are illustrated in another article. Plans for new residential areas near the cities of Salerno, Palermo, Ivrea, Milan, Brescia, Frosinone, Florence, and Cesate, are presented. Reviews of planning progress in Milan, Florence and Naples are among other articles in the issue.

City Manager Inaugurates Quarterly Reports

PROGRESS, Vol. I, No. 1, January-June 1954. —*Edited by Dan Steible, Office of the City Manager, City Hall, Cincinnati, Ohio. Free to citizens of Metropolitan Cincinnati.* 16 *pp.*

Although this first issue of the City Manager's Report to the City Council and the People of Cincinnati covers the six-month period ended June 30, future issues will appear quarterly, the fourth quarter issue including a year-end review. The reports are not intended to be catalogs of customary activities nor statistical documents, but rather they are stories of accomplishments which stand out in retrospect. All types of municipal activities will be covered and reported on as they become pertinent.

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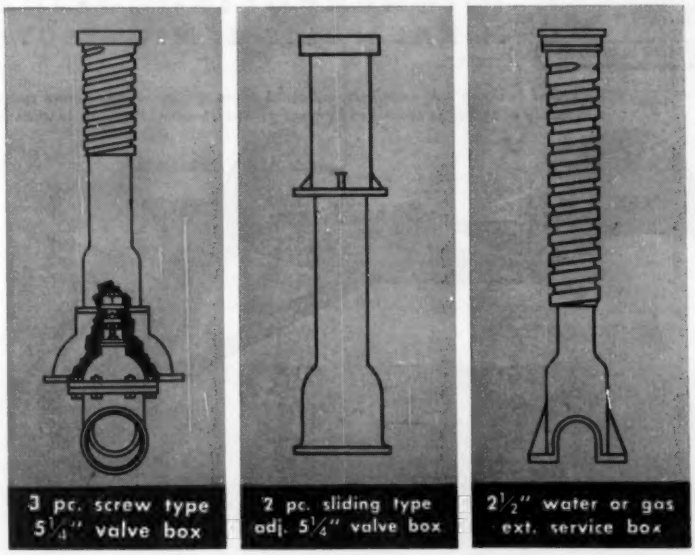

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Employees' Manual

WORKING TOGETHER — *A manual for employees of the City of University City, Mo.*

The full text of this manual is published on pages 97, 98, and 99 of this issue of THE AMERICAN CITY. Elder Gunter, City Manager of University City, states that he "will be glad to send single copies to any reader of THE AMERICAN CITY who desires to have them, at no charge."

Other Reports Received

Administration and Government

GEORGIA—Georgia Municipal Insurance Licenses . . . A Study Made in Cooperation with the Georgia Municipal Association. 1954. Public Administration Studies, No. 6. Bulletin of the University of Georgia, Bureau of Public Administration, Athens, Ga. Tables. 26 pp.

KANSAS—Township Government in Kansas. University of Kansas Publications, Governmental Research Series No. 10. Lawrence, Kans. Maps. Tables. Graphs. 66 pp.

KENTUCKY—Through Their Leaders' Eyes. Community Profile: Clinton and Hickman County, Ky. Kentucky Community Series No. 16. Prepared by Bureau of Community Service, College of Arts and Sciences, University of Kentucky, Lexington. June 1954. Tables. 45 pp.

SYRACUSE—The Second Year of Fact Finding for Sound Government . . . 1953 Annual Report. Bureau of Municipal Research, 221 City Hall, Syracuse 2, N. Y. Illus. 22 pp.

Annual Reports

CORTLAND, N. Y. — Annual Report 1953. Prepared by Graduate Students. School of Business and Public Administration, Cornell University, McGraw Hall, Ithaca, N. Y. Illus. Graphs. 32 pp.

LEWISTON, MAINE—Annual Report for the Year Ending March 31, 1954. Office of the City Clerk. Illus. 63 pp.

Finance and Taxation

CRYSTAL FALLS, MICH.—36th Annual City Statement and Report on Audit, Year ended March 31, 1954. Tables. 31 pp.

MADISON, WIS. — How Should a Board of Tax Review Function? League of Wisconsin Municipalities, 30 E. Johnson St., Madison 3, Wis. June 1954. 14 pp. Twenty-five cents.

PHOENIX, ARIZ. — Annual Budget. Fiscal Year 1954-55. Adopted by the City Council, July 13, 1954. Tables. Graphs. 68 pp.

NEW ROCHELLE, N. Y. — Auditor's Annual Report, 1953. Available from Office of City Auditor, City Hall. Tables. 80 pp.

TOPEKA, KANS. — Annual Report, 1953. Issued by Department of Finance and Revenue. Tables. Graphs. 72 pp.

VIRGINIA — Salaries and Working Conditions of Firemen in Various Virginia Fire Departments. Report No. 366. League of Virginia Municipalities, 905 Travelers Bldg., Richmond 19, Va. August 1954. Tables. 13 pp. Foreign countries, $1.25.

WASHINGTON — Report on the Financial Transactions of the Incorporated Cities and Towns of the State. Cliff Yelle, State Auditor, Division of Municipal Corporations, Olympia, Wash. 1953. Tables. 320 pp.

——20th Annual Convention. Association of Washington Cities in Cooperation with the Bureau of Governmental Research and Services, University of Washington, Seattle 5, Wash. Information Bulletin No. 169. July 2, 1954. 27 pp.

Industry and the Community

GENERAL—What New Industrial Jobs Mean to a Community. Economic Research Department, Chamber of Commerce of the U. S., Washington 6, D. C. 1954. Illus. 12 pp.

Lighting

SEATTLE, WASH.—Annual Report 1953. Department of Lighting. Illus. Tables. Maps. Graphs. 36 pp.

Parks and Recreation

WASHINGTON—Washington Statutes Relating to Parks and Recreation with Annotations. Report No. 127. Bureau of Governmental Research and Services, University of Washington, Seattle, Wash. July 1954. 121 pp. $2.

Personnel

OREGON—Fringe Benefits in Municipal Employment. A Survey of Practices in Oregon Cities Having Over 1,000 Population. Bureau of Municipal Research and Service, University of Oregon, Eugene, Ore., in cooperation with The League of Oregon Cities. Information Bulletin No. 93. May 1954. 44 pp.

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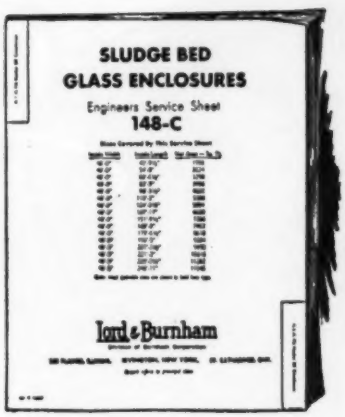

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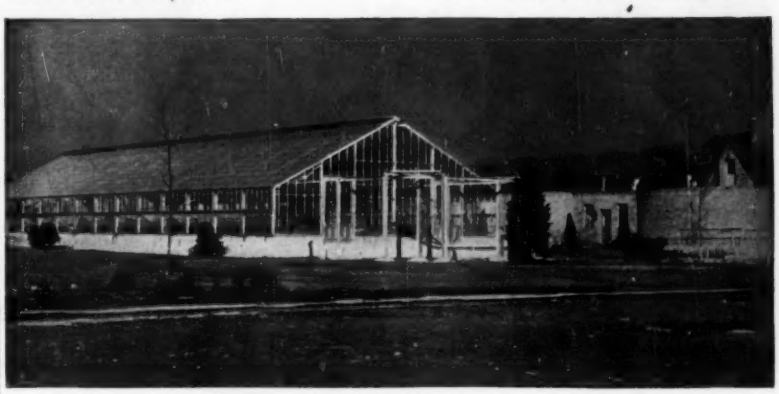

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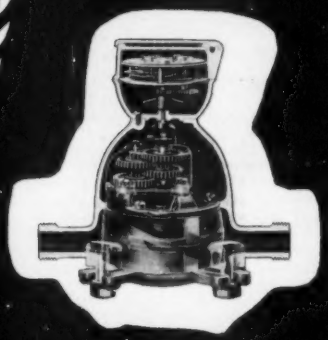

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Planning, Housing, and Zoning

CHICAGO, ILL.—Report for 1953. Chicago Land Clearance Commission, 69 W. Washington St., Chicago 2, Ill. Illus. 20 pp.

MARYLAND—Your Park and Planning Commission at Work. Annual 1953-54. The Maryland–National Capital Park and Planning Commission, 8500 Colesville Road, Silver Springs, Md. 48 pp.

PHILADELPHIA, PA.—A Report on The Housing of Negro Philadelphians. Commission on Human Relations, Commercial Trust Bldg., 16 S. Broad St., Philadelphia 2, Pa. Graphs. Unpaged.

PHOENIX, ARIZ. — Housing Survey, 1953. Phoenix Public Health Department. Maps. Tables. Graphs. 44 pp.

PROVIDENCE, R. I. — Capital Improvement Program. 1954. Supplement to Publication Eight of August 1950. The City Plan Commission of Providence, in collaboration with the Finance Director. Tables. 21 pp.

Public Health

DAYTON, OHIO — 1953 Health Report. Division of Health. Tables. Graphs. 33 pp.

NEW HAVEN, CONN. — 1953 Annual Report of the Department of Health. Tables. Graphs. Illus. 27 pp.

Public Safety

NEW YORK — Guide to Fire Mobilization and Mutual Aid Plans in the State of New York, by B. Richter Townsend and Leonard C. Silvern. Available from Executive Department, Division of Safety, Albany, N. Y. Maps. Tables. Illus. 119 pp.

Public Works

CHICAGO—1953 Annual Report of the Department of Public Works, presented by V. E. Gunlock, Commissioner of Public Works. Illus. 30 pp.

LOS ANGELES, CALIF.—Budget 1954-55. Annual Report of the Department of Public Works for the fiscal year ending June 30, 1953. Tables. 165 pp.

Shopping Centers

CHICAGO, ILL.—The Perimeter Plan for Rehabilitation of Major Shopping Centers. Prepared by Chicago Plan Commission. June 1953. Illus. 9 pp.

Street Construction and Highway Maintenance

CALIFORNIA — Proceedings of the Sixth California Street and Highway Conference, held at the University of California, Los Angeles, February 3-5, 1954. Institute of Transportation and Traffic Engineering, University of California. Graphs. Tables. 159 pp.

PHILADELPHIA, PA.—Real Property Facilities. Department of Streets. A Survey by the Pennsylvania Economy League, Inc., Eastern Division, 1616 Market St., National Bank Bldg., Philadelphia 7, Pa. May 1954. 33 pp. Appendices.

GENERAL — ASTM Standards on Cement (with related information). Sponsored by ASTM Committee C-1 on Cement. Specifications Chemical Analysis, Physical Tests. May 1954. Published by the American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. Illus. 254 pp. $2.75.

Water Supply and Treatment

LONG BEACH, CALIF. — Annual Report of Water Department, 1952-1953. Vol. 10. Board of Water Commissioners, 615 W. Broadway. Maps. Tables. 50 pp.

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Peter Pirsch Dies

THE editors of THE AMERICAN CITY have learned with regret of the passing during August of Mr. Peter Pirsch, pioneer manufacturer of fire-fighting equipment. Mr. Pirsch was 88 at the time of his death which resulted from a heart attack while he was making his daily visit to the firm known as Peter Pirsch & Sons, which he founded in 1900.

Mr. Pirsch had many patents for revolutionary developments in the apparatus industry. His invention of the trussed ladder in 1900 proved a universal success and its principle is still in use today. In 1908 he invented a hose shut off and a door opener which are used by fire departments throughout the world. He introduced the first motor-drawn truck in the United States in 1910.

Mr. Pirsch was active in civic affairs in his home town of Kenosha, Wis., where he served as alderman for 12 years; he was a leader in the local volunteer firemen's unit and was elected an honorary life member of the International Association of Fire Chiefs at the 1944 national convention.

Kangaroo Trash Cans Popular in Oakland

A UNIQUE kangaroo trash receiver designed to combat the litterbug problem has been placed in service at the Oakland (Calif.) Park Department's Children's Fairyland. The kangaroo, which is constructed of plastic laminated glass cloth on a wood and chicken-wire frame, is inexpensive, strong, light, and easy to build. Trash, which is placed in the kangaroo's pouch, drops into a galvanized metal container designed to fit into the body through a door in the kangaroo's back.

Since the installation of the kangaroos we have noticed a reduction in the amount of litter at Children's Fairyland, because children as well as adults are finding it fun to use the unique receptacles. Recently, one of our men overheard one little girl admonish her mother about throwing a candy wrapper on the ground. The little girl proceeded to tell her mother how much fun it was to use the kangaroo trash can.

To further combat the litter problem we also distribute paper bags to groups of children visiting the Fairyland, so that their accumulated luncheon wrappings, candy wrappers, etc., can be put into the bags and deposited in the kangaroo trash cans. The bags are attractively designed and include the following verse:

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Trishy-trashy rags and tag—
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Selecting an Efficient Motor Grader

332 Points to consider before buying a motor grader, are discussed in *There's a Difference in Motor Graders*, a new 8-page booklet from the CATERPILLAR TRACTOR CO., PEORIA, ILL. Graders are tested as to design, manufacture, performance, and service. Two-color illustrations are included. Get *Form D441*.

Keep Swimming Pools Filled With Clean, Fresh Water

333 The correct recirculation needed to keep swimming pool water clear and pure is provided at less cost by a Marlow self-priming centrifugal pump. This unit primes and reprimes itself automatically, facilitating simple above-ground installation. When self-priming is not desired, there is a straight centrifugal pump to meet your needs. For a new bulletin describing a complete line of pumps for swimming pools, address MARLOW PUMPS, DIV. of BELL & GOSSETT CO., RIDGEWOOD, N. J.

Calcium Chloride Improves Unpaved Streets

334 If your city is considering the construction of dense graded aggregate streets and roads, the new booklet, "Calcium Chloride for Stabilization of Bases and Wearing Courses," should prove an invaluable aid. The booklet tells you how, where, and with what materials calcium chloride may be used for a wearing surface, temporary surface base, and regular base. For a free copy of *Manual SM-1*, write the CALCIUM CHLORIDE INSTITUTE, 909 RING BLDG., WASHINGTON 6, D. C.

Standpipes and Elevated Water Tanks

335 Storage tanks in a variety of designs including standpipes and elevated water tanks, are constructed of steel plate and described in *Catalog 54B*. The new catalog contains material specifications, tank design data, foundation recommendations, accessories and fittings, and computing tables for size and capacity. It is available from HAMMOND IRON WORKS, 630 FIFTH AVE., NEW YORK 20, N. Y.

Lightweight Salvage Covers Reduce Fire Losses

336 Equip the firemen in your community with easy-to-handle Shuredry Green-Bak salvage covers, approved by the Associated Factory Mutual Fire Insurance Companies. The covers are made with waterproof seams, and are pressure impregnated with the Shuredry treatment. They are available from FULTON BAG & COTTON MILLS, ATLANTA 1, GA.

Drinking Fountains

337 *Catalog 51* describes recessed wall fountains for hospitals and public buildings, multiple bubbler fountains for schools, pedestal fountains for parks and beaches, battery fountains, and new ice-cooled units. Also water coolers, bubblers, and fountain stops, fittings and parts. Write the CENTURY BRASS WORKS, INC., BELLEVILLE, ILL.

Float Type Meter Measures Sewage Flow

338 The flow of sewage, sludge, dirty water, or other liquids in pipelines is accurately measured by a Bailey float type meter using a venturi tube, flow nozzle or orifice as the differential producing device. Other meters offered by this company include dependable fluid meters, flume meters, and boiler meters. Also a multi-pointer gauge and a smoke density recorder. Write the BAILEY METER CO., 1035 IVANHOE RD., CLEVELAND 10, OHIO.

Sewer Rods and Accessories

339 Available in two sizes, Sure Grip sewer rods are joined together with a dual lock, forming a rigid chain that will float. They can be coupled or uncoupled right on the job. For complete information on Sure Grip sewer rods and other dependable sewer cleaning equipment, write the EXPANDING SEWER MACHINE CO., NAPPANEE, IND.

New Trenching Machine Speeds Pipeline Installation

340 All of your city's heavy construction jobs—even difficult pipeline installations, are simplified with this new heavy-duty trenching machine. The Cleveland Model 240 is a crawler-mounted, wheel-type unit, capable of digging a trench 36 inches wide and 6 feet 3 inches deep. It is made by THE CLEVELAND TRENCHER CO., 20100 ST. CLAIR AVE., CLEVELAND 17, OHIO.

Automatic Gates Protect Railroad Crossings

341 Easy to install at all railroad crossings, these automatic gates offer fast, around-the-clock operation under all weather conditions. The operating mechanism consists of heavy-duty gears mounted in a cast alloy frame, and the crossing gate arms are made to any desired length. Extended flashing lights and reflectorized aluminum signs are included. For *Bulletin No. 115*, write the GRISWOLD SIGNAL CO., 1706 LINDEN AVE., MINNEAPOLIS, MINN.

Butterfly Valves

342 Lightweight butterfly valves that are inexpensive to install and maintain are made by MUD PRODUCTS, INC., PHILTOWER BLDG., TULSA 3, OKLA. Combining positive seal with quick-closing features, the new Mudco-O-Ring valve offers a working pressure of 125 psi. It is self-cleaning, features minimum restriction to flow, and never needs lubrication. Details on request.

Overhead Doors

343 Overhead doors are constructed of steel or wood in any size to fit any opening by the OVERHEAD DOOR CORP., HARTFORD CITY, IND. The doors may be manually or electrically operated or, if preferred, the firm's engineers will recommend an efficient system of remote control. They are delivered as a complete unit and installed without cost.

Aerial Maps Give All the Facts

344 This accurate picture map helps solve traffic problems by placing every existing building, elevation, and landmark in your city right on your desk. Fairchild Photomaps and Contour Maps enable street-routing decisions to be made quickly and accurately. They are fully discussed in *Focusing on Facts*, a new, illustrated booklet from FAIRCHILD AERIAL SURVEYS, INC., 224 E. 11th ST., LOS ANGELES, CALIF.

Acidize Those Failing City Wells

345 If the water level in your city's well supply drops as heavily as bad news on the stock market, cheer up. Your city doesn't necessarily have to commit itself to an expensive reconstruction program. Tests by DOWELL INCORPORATED, TULSA 1, OKLA., have shown that you can often reclaim a well, even when the water table has dropped 30 feet, by acidizing. Write to this company and ask for case histories and other information describing how acidizing has increased water production in failing wells.

Improves Sludge Digestion

346 A good way to overcome the problem of poorly digested sludge in sewage treatment is by applying Bionetic, a dry powder that cuts sludge volume in half, producing a grainy, rapid drying sludge that looks like tar and smells like humus. By eliminating scum blankets, Bionetic increases digester capacity while it increases the pH and reduces volatile acids. What type of Bionetic to use, how to apply it, and the many ways in which the new powder aids sludge digestion, are all explained in literature from the RELIANCE CHEMICALS CORP., P. O. BOX 6724, HOUSTON 5, TEXAS.

Ground Level Servicing Of Street Lights

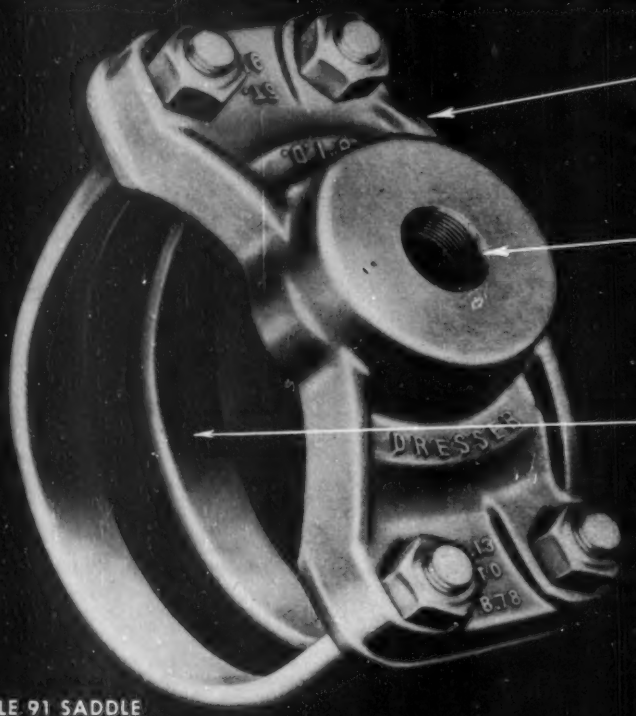
347 Assemblies that permit safe ground-level maintenance of street lights as well as increased mounting heights, are described in *Bulletin WPH-54*. Four "Servisafe" models are discussed, the single-arm metal pole unit, double-arm or "Y" metal pole unit, single-arm bracket for wall installations, and single-arm bracket for wood poles. Standard pendant luminaires can be utilized with all models. Write THE THOMPSON ELECTRIC CO., 1120 POWER AVE., CLEVELAND 14, OHIO.

Provides A. C. Power Instantly

348 Weighing only 50 pounds, this combination electric power plant and water pump will supply from 700 to 1,000 watts of a.c. electricity quickly, and is capable of charging 6- or 12-volt batteries. It is easily carried by one man to any location where standby power or water pressure are needed. Data on the DeLuxe Model 701P are available from the TRAILITE CORP., THREE LAKES, WIS.

(Please turn to page 205 for more Bulletins)

NOW AVAILABLE



STYLE 91 SADDLE
(8" ID)

HEAVIER CONSTRUCTION
Bodies designed with heavily reinforced sections, ruggedly constructed from Grade A malleable iron.

FULL TAPPING RANGE
Available with Corporation Stop Thread or IPS Thread taps to 2 inches in size. Large boss insures full threads.

FLAT STEEL STRAPS
Accurately shaped, high tensile steel straps conform to pipe. Wide, flat surfaces prevent cutting or crushing.

FITS RANGE OF PIPE
Fits steel, cast iron and asbestos-cement pipe within size range clearly marked on each saddle.

NEW DRESSER SERVICE SADDLE

...designed for long, rugged service

The new Dresser Style 91 Service Saddle has been carefully designed for maximum dependability, economy and ease in making service connections.

The body of the saddle is heavily constructed with a Dresser gasket of time-proven Grade 27 compound securely cemented in place. Cold-rolled threads give the bolts greater strength and added resistance to corrosion.

Style 91 Saddles are heavily galvanized or protected with Dresser's new plastic dip. This coating covers all threads as well as saddle surfaces, has dielectric strength, will not "plate out". Saddles are packaged for convenient handling and storage.

Order a stock of Dresser's new, economical Style 91 Saddles from your local waterworks supplier today, or write us!

DRESSER®

Dresser Manufacturing Division, 69 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston; 101 S. Airport Blvd., S. San Francisco. Sales Offices also in: New York, Philadelphia, Chicago, Toronto.

Catalogs for You

Write directly to the manufacturers or use coupon on page 29

Easier Way to Operate Gate Valves

349 Why operate and maintain large valves and gates manually, when a Dean Gate Operator will do the job for you faster, more economically, and with fewer men? Using the new machine, a 36-inch gate can be closed in 10 minutes with a crew of two men. The unit is easily attached to any truck, and is available from PAYNE DEAN & CO., CLINTON, CONN. Ask for *Bulletin 200*.

Centrifugal Pumps

350 Use these sturdy centrifugal pumps for cooling tower service on municipal air conditioning jobs, for sprinkling systems, and for improved swimming-pool filtration. The Model B and Model BB Electropumps combine a dependable pump and motor built for lasting service with minimum maintenance. They are discussed in *Bulletin No. 212*, from the CARVER PUMP CO., MUSCATINE, IOWA.

New Ice Control Spreader

351 An augur and agitator operating inside the truck body of this new spreader, provide positive feed, prevent channeling, and break up frozen lumps of abrasives to spreading size. The new Posi-Feed spreads powdered lime, cement, sand, cinders, or crushed rock. It is operated by one man and may be quickly converted to a sealcoat unit. Write CENTURY ENGINEERING CO., WAUKESHA, WIS.

Shockproofs Small Water Pipe

352 The annoyance of water hammer in pipe lines varying from ½- to 2 inches need no longer be a problem, now that the new Josam shock absorber is available. This absorber has been especially designed to permit it to regain its original form immediately after the force used to distort it is removed. The absorber is reported to be absolutely leak-proof and cannot wear out. To get your copy of literature illustrating this new unit, write JOSAM MFG. CO., DEPT. X21, MICHIGAN CITY, IND.

Your Property Valuations

353 Effective real-estate taxation demands that property valuations be kept up to date, reflecting changes in the property and in price levels. The best and, in the long run, most inexpensive way to revaluate the property in your community, is to hire a staff of experts to do the job. THE AMERICAN APPRAISAL CO., 525 E. MICHIGAN ST., MILWAUKEE 2, WIS., is offering a new booklet describing procedures in property appraisal. Copies of *How You Benefit by American Appraisal Service* will be furnished on request.

Storage Tanks, Smokestacks and Piping Equipment

354 Dependable steel and alloy fabrications, including storage tanks, smokestacks and piping for all municipal applications, is offered by the J. J. FINNIGAN CO., 455 MEANS ST. NW., ATLANTA, GA The firm is an immediate source for boilers, heaters, cyclonic separators and hot-water generators. All Finnigan equipment is designed to meet A.S.M.E. specifications. Write for full information.

LEADITE

The Pioneer Self-Caulking Material for C. I. Pipe

TABLE OF COMPARATIVE QUANTITIES

Nominal inside dia. of pipe, in.	Depth of joint, Inches of Leadite	Approx. lbs. of Leadite per joint	Depth of joint, Inches of lead	Approx. lbs. of lead per joint
4	2.5	2.00	2.25	8.56
6	2.5	3.00	2.25	11.71
8	2.5	4.00	2.25	14.63
10	2.5	5.00	2.25	17.70
12	2.5	6.00	2.25	20.86
14	2.5	7.00	2.25	24.02
16	2.5	8.25	2.25	33.07
18	2.5	9.25	2.25	36.88
20	2.5	10.50	2.25	40.71
24	2.5	13.00	2.50	53.02
30	2.75	16.00	2.50	65.36
36	2.75	19.00	2.50	77.96
48	3.50	30.00	3.00	121.15
54	4.0	38.00	3.00	135.60
60	4.0	42.00	3.00	150.70

THE LEADITE COMPANY
Girard Trust Co. Bldg., Philadelphia 2, Pa.

No Caulking

UNDERGROUND PIPING JOBS DONE IN LESS TIME AT LOWER COSTS

Here's the quick, simple way to install pipe under streets, walks, tracks, floors and lawns. With a GREENLEE Pipe Pusher *one man* pushes pipe *under* obstacles. No tearing up concrete, lawns, floors. Eliminates extensive ditching . . . no tedious tunneling, back-filling, repaving. Cuts job time to a fraction . . . GREENLEE Pipe Pusher often pays for itself on first job. Get facts today.

GREENLEE

Greenlee Tool Co., 2030 Columbia Ave., Rockford, Ill.

Super REFLECTIVE

PREMIXED Cataline BRAND REFLECTIVE STRIPING COMPOUND

PREMIXED TRAFFIC PAINT

★ Weatherproofed with latex

★ Fast Drying—will not track after 6-minutes

Reduce frequency of street marking—eliminate tracking and smearing—lower maintenance costs. CATALINE Reflective Striping Compound consists of super-tough, plastic latex rubber binder of special CATAPHOTE weatherproof composition. Into this binder has been *premixed* the millions of tiny, optical-crown glass beads. THE RESULT . . . *unusually brilliant reflection* by night and day when the compound is applied as street and highway markings.

Easily and rapidly applied with standard line marking equipment—NO BEAD DISPENSER NECESSARY.

MAIL FOR CATALOG DATA AND PRICES

☐ CATALINE PREMIXED REFLECTIVE STRIPING COMPOUND.

☐ CATALINE BEADS-ON-PAINT (DROP-ON) REFLECTIVE STRIPING COMBINATION.

☐ CATAFLEX REFLECTIVE COATING KITS.

Cataphote CORPORATION TOLEDO 10, OHIO

BITUMASTIC 100TH Anniversary PROTECTION 1854 1954

...by protecting pipe lines with Bitumastic® 70-B Enamel

THERE are two ways to buy steel pipe for large-diameter water lines. One method is expensive—the other economical. You can buy *oversized* pipe to allow for future loss in flow capacity caused by tuberculation and incrustation . . . or you can buy *smaller* pipe solely on the basis of desired capacity and then prevent "shrinkage" by using Bitumastic 70-B Enamel.

Flow capacity *stays* high when a spun lining of Bitumastic 70-B Enamel protects interior surfaces against rust, corrosion, incrustation and tuberculation. Flow tests, conducted on steel pipe lines, centrifugally lined with hot Bitumastic 70-B Enamel, have shown the value of Hazen-Williams coefficient "C"= 145 to 170—the average being 155.

On wall thickness, too, you can save on steel by using Bitumastic 70-B Enamel. Applied to a thickness of approximately 1/16", this durable enamel protects the exterior of pipe against the corrosive action of the soil. There's no need to specify an excess of wall thickness to compensate for corrosion. Just specify enough wall thickness to give the pipe adequate structural strength and then use Bitumastic 70-B Enamel to prevent corrosion.

Use strong, durable steel pipe, lined and coated with Bitumastic 70-B Enamel. It's a good combination—an economical combination. Write for full information.

KOPPERS BITUMASTIC ENAMELS
REG. U.S. PAT. OFF.

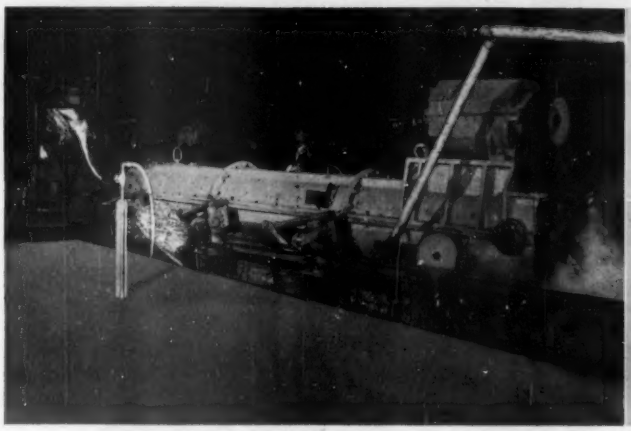
KOPPERS COMPANY, INC., Tar Products Division
Dept. 1022-T, Pittsburgh 19, Pennsylvania

DISTRICT OFFICES: BOSTON, CHICAGO, LOS ANGELES, NEW YORK, PITTSBURGH, AND WOODWARD, ALA.

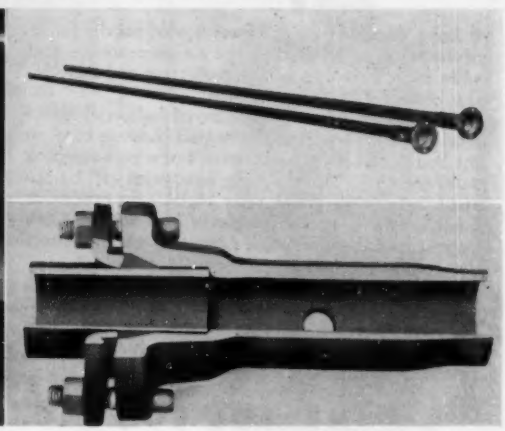
Purchasing News

Information for officials interested in equipment and services for the construction, operation and maintenance of municipal utilities

Cast-Iron Pipe in Small Diameters



The small-diameter Super DeLavaud pipe is now being centrifugally cast in a new pipe foundry constructed by the McWane Cast Iron Pipe Company of Birmingham, Ala.



McWane 2- and 2¼-inch cast iron pipe, top photo, is available in 18-foot lengths. Below is a closeup of the Boltite mechanical joint.

Cast-iron pipe with inside diameters of 2- and 2¼ inches is now being centrifugally cast by the McWane Cast Iron Pipe Co., Birmingham, Ala., and may be obtained in 18-foot lengths. The small-diameter pipe is offered with bell-and-spigot or Boltite mechanical joints, and is being furnished with a complete line of B & S or mechanical joint fittings.

Like all McWane Super DeLavaud pipe, the small-diameter pipe is easy to cut and tap, and simple to install. Pipe and fittings are available tar-coated, uncoated or cement-lined. The 2-inch pipe weighs 6.2 pounds per foot, and the 2¼-inch pipe, 6.8 pounds per foot, including the bell. Each length of pipe has a tapping collar which is cast integrally with the pipe, behind the bell.

McWane has constructed a new pipe foundry specially equipped to handle small-diameter pipe. It contains a battery of centrifugal casting machines, an annealing oven, coating vats, a cement lining machine, and hydrostatic testing pressures.

Additional information on the new, small-diameter pipe may be obtained directly from the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 753.

Voters' Records from Electric Punched Cards

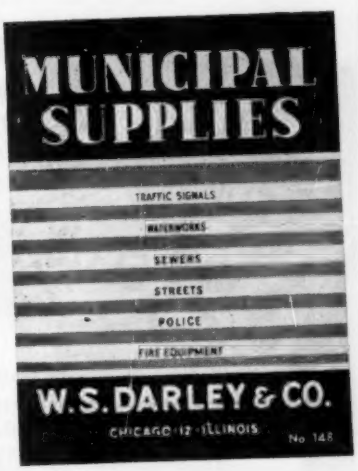
When punched card methods are used to set up and maintain voters' registration records, a card for each registered voter is prepared easily and quickly on the card punch. These cards, representing all registered voters, are filed in street and house-number sequence, and will be used to prepare street lists, poll lists, and other reports prepared in this sequence.

The Voters' Name File is prepared by mechanically duplicating or reproducing the master file. These cards are arranged by name, in alphabetical sequence, by a fast machine operation. The most important function of this file is to provide a ready reference by name of voter and to provide positive control over possible duplication of registrations.

The poll lists, the street list of electors, and other necessary reports and records are prepared by the accounting machine. Agreement of all records and reports is assured because they are prepared from the same IBM cards.

For the new folder, "Voters' Registration Records," write the International Business Machines Corp., 590 Madison Ave., New York 22, N. Y., or use the Post Card in this section. Circle No. 746.

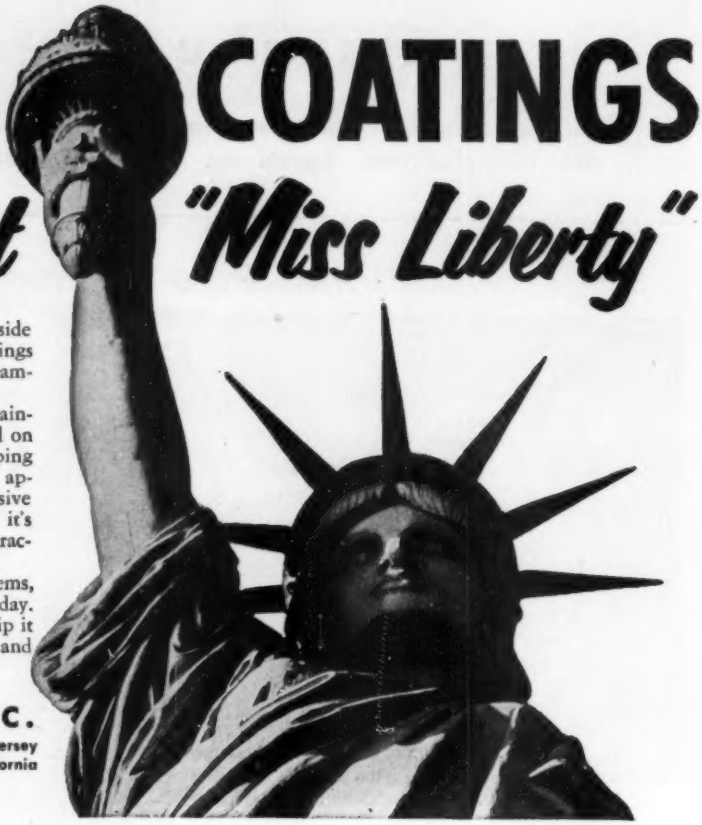
NEW CATALOG!



WRITE TODAY
For
100 PAGE
MUNICIPAL CATALOG

W. S. DARLEY & CO.
CHICAGO 12

INERTOL® COATINGS protect "Miss Liberty"



● Long, durable protection was needed for the inside of the Statue of Liberty. Inertol maintenance coatings were used. This way, lasting protection and a gleaming, beautiful finish were assured.

Inertol makes a complete line of industrial maintenance paints—such as the rugged coatings used on the Statue of Liberty and Inertol's new rust-stopping RUSTARMOR®. This amazing new paint can be applied directly to sound rusty metal—no expensive sandblasting is necessary. Never gets sticky — it's hygroscopically controlled. Comes in eleven attractive colors.

For detailed answers to your painting problems, write for FREE folder and color chart CA-2 today. No letter required. Just tear out this page and clip it to your firm's letterhead. Jot down your name and title and mail.

INERTOL CO., INC.
485 Frelinghuysen Ave., Newark, New Jersey
27-M South Park, San Francisco 7, California
INERTOL PROTECTION MEANS
LOWER MAINTENANCE COSTS

A SURE SIGN . . . OF EFFICIENT TRAFFIC CONTROL

Signs by MIRO-FLEX

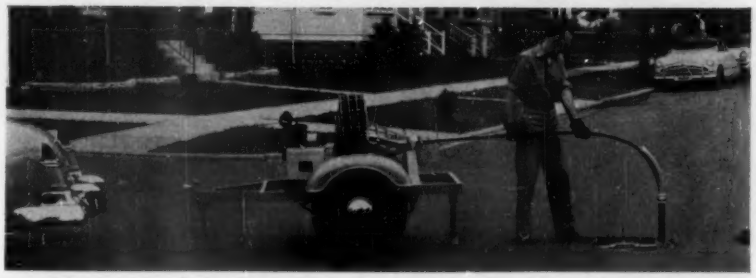
Select safety and traffic control signs from America's finest complete sign line. Make your choice from either plain embossed or reflectorized styles. All MIRO-FLEX signs are embossed to not less than 0.100 of an inch and are finished in highest-grade enamels baked in thermostatically-controlled ovens.

See your Miro-Flex Sign representative or write for complete catalog and prices.

Stop signs are available in either black on yellow or white on red. Reflectorized types may be had with either glass or plastic buttons...reflective sheeting or beaded background. When you consider all the features, you know that MIRO-FLEX signs are *the most readable, strongest and longest-lastings signs available.*

THE MIRO-FLEX CO., INC.
1824 EAST SECOND WICHITA, KANSAS

Simplifies Sewer Cleaning



New O-B power transmission acts as a retriever, pulling the cable back into the machine when the line has been cleaned. Long cable lengths reduce connection problems.

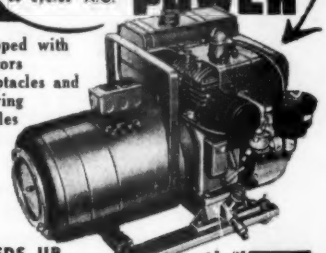
The usefulness of an O'Brien Sewerking doesn't end with regular main sewer line cleaning, according to the O'Brien Mfg. Co. In addition, the unit goes through traps and bends for the swift, low-cost completion of virtually all of your sewer cleaning work.

Besides sectional steel rods, the Sewerking uses heavy-duty flexible steel cable in long lengths. It incorporates an O-B power transmission which turns the cables and cutting tools into the sewer and, when the work is complete, pulls the cable back into the machine. The long cable lengths serve to reduce the problem of connection and disconnection work. Only two men are required to operate the machine.

Detailed information on the new Sewerking is available from the O'Brien Mfg. Co., Dept. AC-10, 5663 Northwest Highway, Chicago 30, Ill. Write the company directly, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 751.

Wherever you are the job is easily done with Katolight Portable POWER

60 cycles A.C.



Equipped with Isolators Receptacles and Carrying Handles

SPEEDS UP WORK . . . CUTS COSTS!

Wherever the job takes you, power is readily and easily available with a Katolight Portable Power Plant. Operates saws, hammers, manhole heaters, floodlights, pumps and other tools and equipment.

Model above generates 115 volt alternating current, 60 cycles. Other AC models from 350 watts to 50 KW. DC Models to 15 KW.

STANDBY POWER PLANTS

Whatever your municipal departments need, you'll find a Katolight generating unit up to 300 KW.

WRITE FOR DETAILS

Katolight CORPORATION

Box 891-25 Mankato, Minnesota

SODIUM SILICOFLUORIDE

(Fluosilicate)

Inquiries Invited!

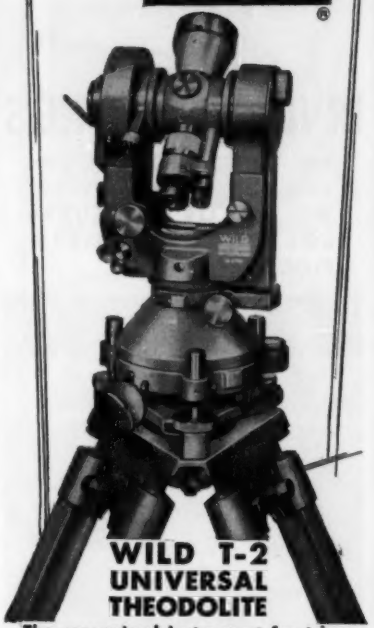
TENNESSEE TC CORPORATION

1028 Connecticut Ave., N. W.

WASHINGTON 6, D. C.

TOMORROW'S INSTRUMENT TODAY!

WILD HEERBRUGG



WILD T-2 UNIVERSAL THEODOLITE

The recognized instrument for triangulation, bridgework and other precise engineering jobs... The Instrument For YOU.

You read both circles by microscope ... direct to one second. Every reading gives the mean of two diametrically opposite points of the circle, and is therefore free from eccentricity-errors.

The optical plummet makes centering above a ground point an easy and quick operation even on windy days. The telescope with its big field of view is "easy on the eye" and can be transited both ways.

Available accessories include battery box for night work, traverse targets, Invar Subtense Bar for optical distance measurement.

Choose WILD instruments for ease of operation, speed and accuracy.

Write or phone for Booklet AC-10

Full Factory Service by Specialists

WILD HEERBRUGG INSTRUMENTS INC.

MAIN & COVERT STS., PORT WASHINGTON, N. Y.

PORt Washington 7-4843

KEEP in STEP!

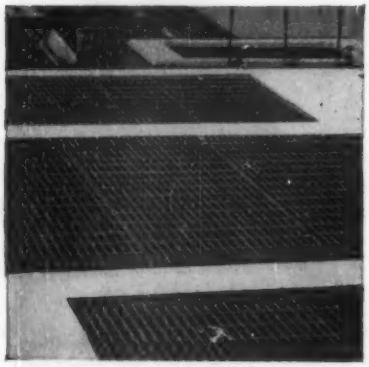
. . . Take Advantage of

SAFETY,
ECONOMY,
DURABILITY,

Every Step of the Way.

...CHOOSE
IRVING GRATINGS

You're on SURE FOOTING with Versatile IRVING RIVETED, WELDED OR PRESSURE-LOCKED OPEN MESH FLOORING . . .



FOR: Walkways, Catwalks, Flooring, Draingrates, Stairways, Stair Treads.

IN: Sewage Disposal Plants, Water Treatment Works, Power Stations, Bus Laundries, and other Public Works Installations.

Specify IRVING GRATING for:

★ Light Weight
★ Simple Installation
★ Self-Draining Features
★ Self-Ventilating Qualities
★ Minimum Maintenance Cost
★ Custom-Built Perfection
★ Prompt Delivery
★ Safety ★ Durability

"A Fitting Grating for Every Purpose"

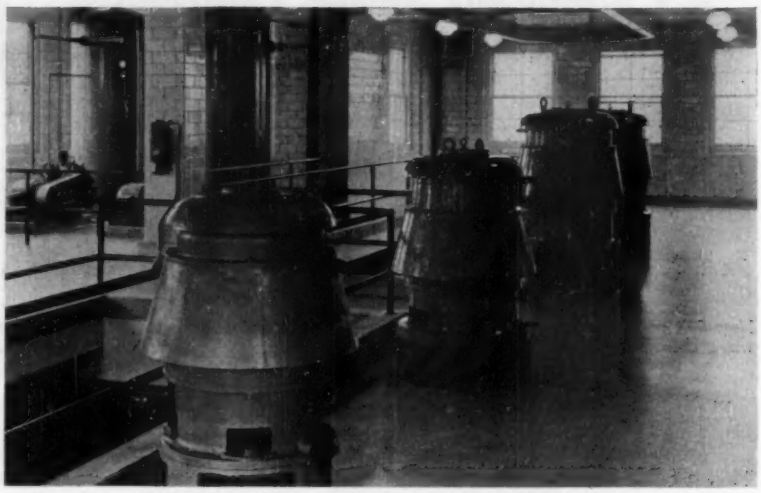
Ask for Illustrated Catalog

IRVING SUBWAY GRATING CO., INC.
ESTABLISHED 1902

OFFICES and PLANTS at

5056 27th St., Long Island City 1, N. Y.
1056 10th St., Oakland 20, California

Purchasing News

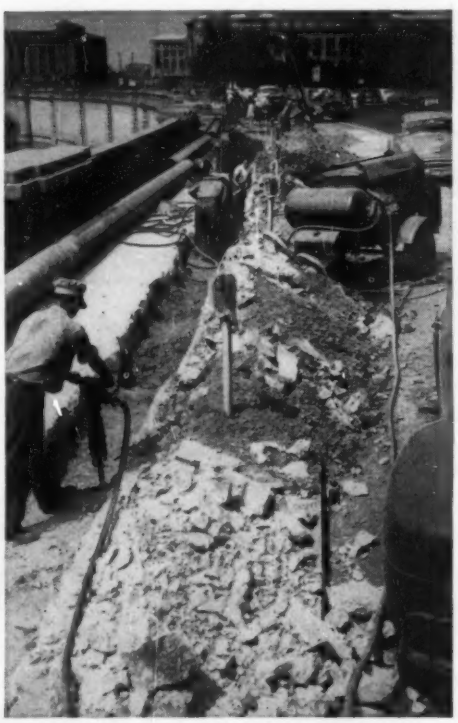


The "scrubbed clean" appearance of the Linden-Roselle pumping station is made possible by application of the Inertol Company's corrosion-resistant paints.

Resists Corrosive Fumes

The interior of the pumping station of the Linden-Roselle sewage treatment plant keeps looking spick and span despite the presence of difficult corrosive conditions. The plant has to handle a combination industrial waste and sewage containing hydrocarbon oil-refinery wastes, hydrogen sulphite fumes, and concentrations of sulphur dioxide and sulphur trioxide.

To withstand these severe chemical conditions, the designers specified that



Same tools . . . do 30% more work with JAEGER 125's

Capacity to get more work out of today's heavy air tools has made the "125" the most popular of all compressor sizes. Jaeger established this 125 rating 6 years ago and guarantees to deliver this volume at lowest cost per ft. of air.

← To speed laying of pipeline in this busy boulevard, a pair of Jaeger 125's were used in place of obsolete 105 ft. compressors to do the job 30% faster.

Other "Jaeger standard" sizes 75 to 600 ft. See your Jaeger distributor, or write for Catalog JC-1.

THE JAEGER MACHINE COMPANY 505 Dublin Avenue Columbus 16, Ohio

PUMPS • MIXERS • TRUCK MIXERS • LOADERS • PAVING MACHINES

the interior of the station be protected with a corrosive-resisting paint. Inertol coatings were used exclusively. The plant was designed by Alexander Potter Associates, New York City, and is operated by the Linden-Roselle Sewerage Authority, Linden, N. J.

THE INERTOL CO., INC., 480 FRELINGHUYSEN AVE., NEWARK 5, N. J., reports that it has formulated many such coatings that will withstand severe corrosive conditions. A complete listing can be obtained directly from the company, or use the Post Card on the colored page in this section. Circle No. 749.

Combination Saw and Brush-Cutting Attachment

Note the ease with which the new Lombard brush-cutting attachment is handled.

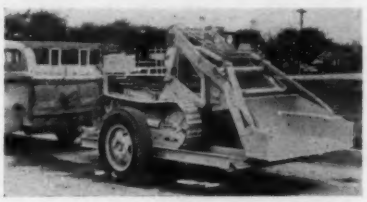
Transform the powerful Lombard chain saw into an effective brush-cutter by attaching the new, lightweight Lombard "Brush-Cut."

This powerful brush-cutting attachment may be used with standard Lombard Models 30, 35, 3A or 3½D, and will cut down heavy growths quickly and economically. It is easily slung on by the operator, leaving both hands free for complete control in a natural scythe-holding manner. The balanced weight is taken by a comfortable shoulder strap and a contoured plate against the thighs.

A complete description of the "Brush-Cut" is available from LOMBARD, 68 MAIN ST., ASHLAND, MASS. Write directly, or use the Post Card on the colored page in this section. Circle No. 770.

New Trailer Transports Crawler Tractor

A new trailer, easily attached to a pick-up truck, transports the Terratrac crawler tractor from job-to-job. The unit, designed by the American Tractor Corp., saves time and cuts costs. One operator drives the pick-up truck, unloads the



Loading and unloading the Terratrac from the new trailer is safe and easy.

trailer, operates the tractor, and reloads without help.

The Terratrac rides low—only 14 inches from the ground. It is equipped with heavy-duty tires, electric brakes, a sturdy drop axle, safety chains, and a ball-type hitch.

Available only with the Terratrac, the new trailer is described in literature from the AMERICAN TRACTOR CORP., CHURUBUSCO, IND. Write directly, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 778.

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FISHER
M-SCOPE
"ELECTRONIC WITCH"
PIPE-CABLE-FINDER
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USED AS A PIPE FINDER

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- IMMEDIATE SHIPMENT
- WRITE TODAY FOR THE COMPLETE "ELECTRONIC WITCH" STORY.

FISHER RESEARCH LABORATORY, INC.
PALO ALTO CALIF.

Keep holiday shoppers "*on the move*" with—

"METER STUFFERS" are a real headache during the holidays. And that's when Harley-Davidson Servi-Cars really shine. They're the simple, dependable and efficient way to keep cars moving in and out of metered parking areas on time . . . to give every shopper a chance to park.

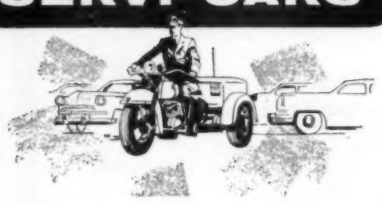
Yes, there's no match for this job-proved three-wheeler on parking patrol. The mounted officer has an unobstructed view of the meters . . . and a clear shot for marking tires.

Join the thousands of communities that help merchants and motorists alike by moving cars out of metered areas on time. With the compactly designed, sturdily-built Harley-Davidson Servi-Car, your city can enjoy uninterrupted, dependable parking and traffic control.

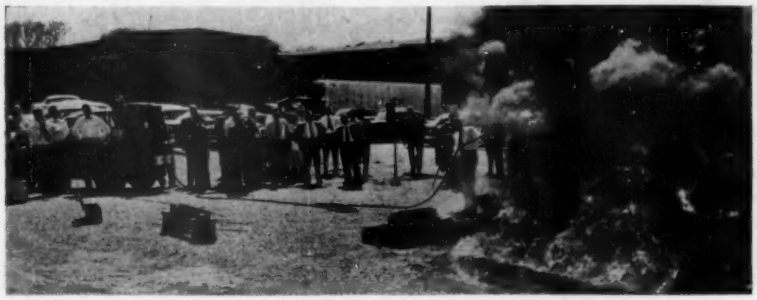
Ask about the Harley-Davidson Servi-Car at your dealer's or write us today for complete information.

HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wisconsin.

HARLEY-DAVIDSON
POLICE
SERVI-CARS



New Fire-Fighter Provides Emergency Electric Power



Versatile Power and chemically treated water extinguished this diesel fire in 27 seconds.

When it isn't busy fighting fires, this new, portable unit can be used to provide dependable electricity for communications, floodlights, tools and emergency power. The unit is called Versatile Power and is operated by a 35,000-watt, a.c., Onan electric generating plant. It is offered by the NATIONAL ALARMS CORP., LAFAYETTE, LA.

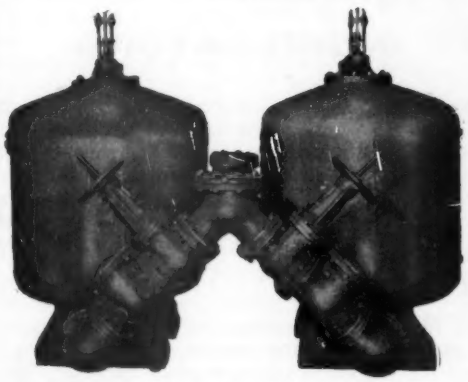
Versatile Power utilizes Unox, a chemical solution which multiplies the effectiveness of water from 10 to 20 times. This wet-water solution carries the Underwriters' Laboratory seal of approval, and is suitable for Class "A" and Class "B" fires. Applied with Versatile Power, it is capable of extinguishing a roaring diesel oil fire in only 27 seconds.

Because it combines the advantages of a good piece of fire-fighting apparatus with those of a dependable emergency electric plant, Versatile Power is an ideal unit for large and small communities and civil defense organizations. It is fully described in literature from the National Alarms Corp. Write the company directly, or use the Post Card on the colored page in this section. Circle No. 766.

THE MODERN WAY

TO LIFT SEWAGE AND SLUDGE AT TREATMENT PLANTS

USE BLACKBURN-SMITH PNEUMATIC SEWAGE EJECTORS



Duplex Sewage Ejector, showing inlet piping.

PREFERRED by most prominent consulting engineers as **LESS MESSY MORE SANITARY** than centrifugal submerged type sewage ejectors or pumps.

ENDS CLEANING of screens and pumps.

LIFTS STRAIGHT UP, 150 feet capacity, once a minute, without fail.

30 to 500 GPM in both single and twin units against high discharge heads.

Over 60 years service has proved the rugged worth of Blackburn-Smith Ejectors. Furthermore, today's product has been improved with the following exclusive features:

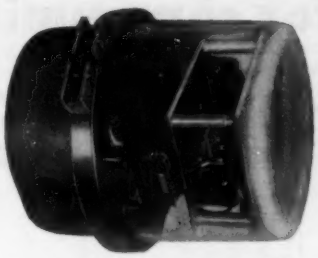
1. Float and electrical float switch controls.
2. Float and pneumatically controlled snap action valve.
3. Electrode controls.

Any one of the above, with or without Air Receiver.

Get Catalog 550 today

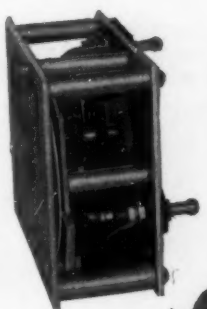
BLACKBURN-SMITH MFG. CO. 57 GARDEN ST., HOBOKEN, N. J. HO. 3-4425 N. Y. Tel: BA. 7-0600

TIME-O-MATIC FLASHERS JACK MOUNTED

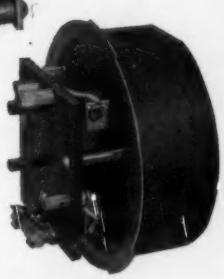


Time-O-Matic Jack Mounted Flasher in Standard Meter Case

Single or two circuits, every model with built-in eliminators. Available with standard meter case (above) or separately with Jack mounting panel (below).



Time-O-Matic Jack Mounted Flasher Only



Time-O-Matic Jack Panel in Meter Case

SPECIFY DEPENDABLE TIME-O-MATIC

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"A Sign of Good Control"

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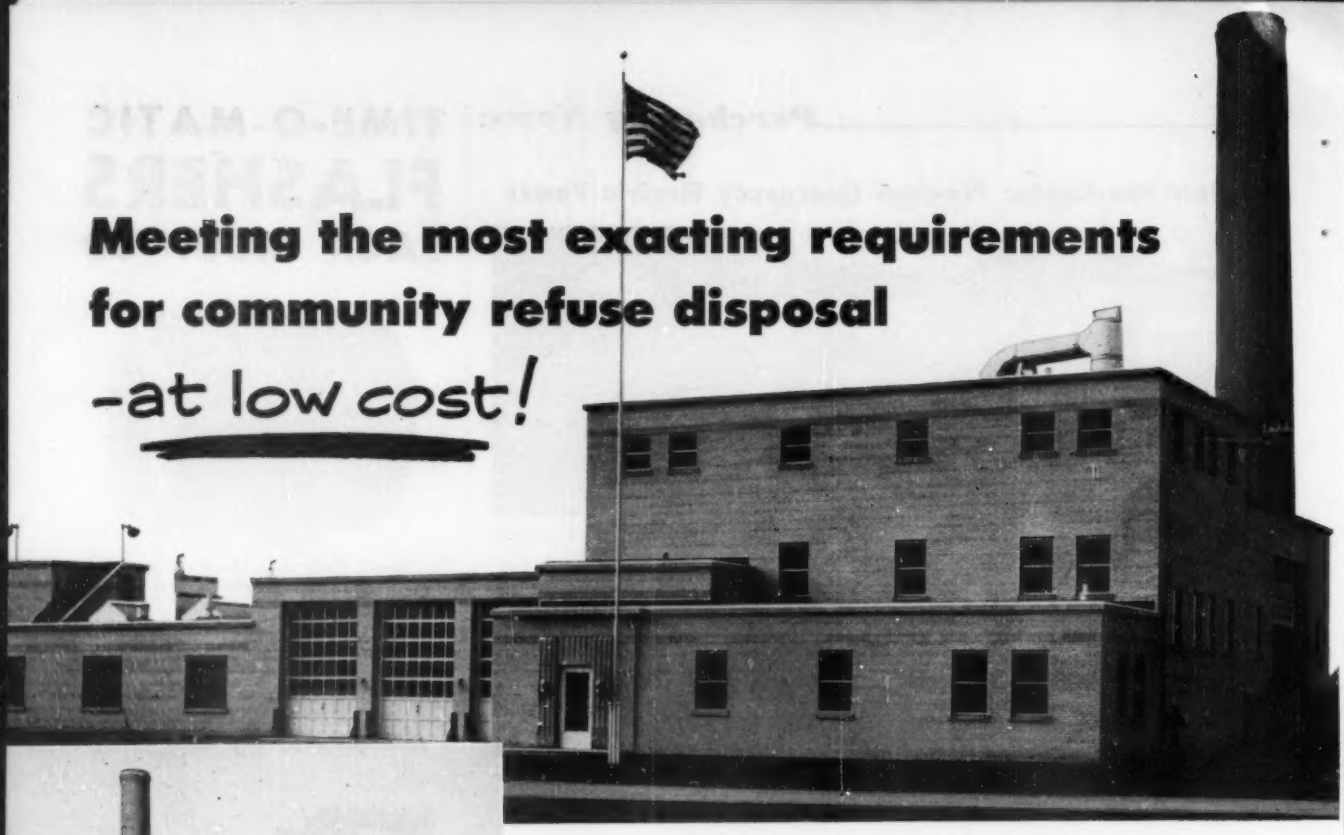
TIME-O-MATIC CO.

1108 Bahls Street

Danville, Illinois

Meeting the most exacting requirements for community refuse disposal

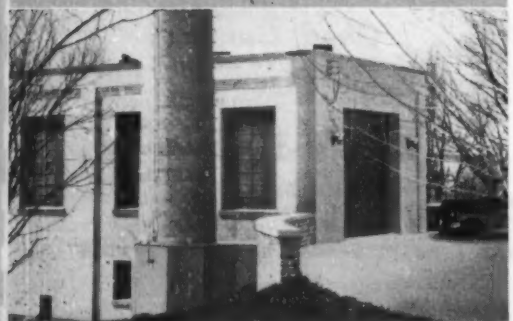
-at low cost!



Fond du Lac, Wisc. Capacity 90 tons per 24 hours

Stamford, Conn. Capacity 225 tons per 24 hours

Darien, Conn. Capacity 60 tons per 24 hours



Little Falls, N. Y. Capacity 30 tons per 24 hours

PITTSBURGH • DES MOINES

High Temperature

REFUSE INCINERATORS

Pittsburgh-Des Moines Incineration Plants reduce collected garbage and refuse to sanitary ash in minimum time—at minimum cost per ton—and without offense to surrounding areas. These modern units feature controlled *high-temperature* operation, providing freedom from smoke or odor, and are built in a complete range of capacities for communities of every size.

MECHANICAL STOKING

Now available for new and existing P-DM Incinerators, mechanical stoking system assures top operating efficiency, enlarges plant capacity, reduces man hours and labor, lengthens refractory life. Write for details and consultation, without obligation.

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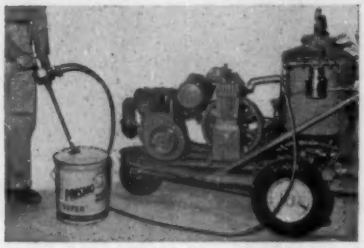
LOS ANGELES (48) . . . . . 6399 Wilshire Blvd.	SANTA CLARA, CAL. . . . . 619 Alviso Road

New Paint Mixer Simplifies Line Marking



The new mixer uses 2-way, Turbu-Dig action to loosen the settled paint pigment and get it back into suspension.

An easy way to loosen settled pigment in traffic-line paint and get it back into suspension, is to use the Airomixer, a new paint mixer developed by WALD INDUSTRIES, INC., HUNTINGDON, PA.

The Airomixer uses a suction-type impeller to dig into and loosen the settled pigments. The corrosion-resistant impeller prongs dig into the hardest settlement, at the same time, sucking the fluid through the loosened pigment and churning it into uniform suspension. The result is a fresh can of traffic-line paint which will cover evenly and spread smoothly.

An accessory for the Wald Reflecto-Liner, the new paint mixer is powered by the striping machine, and is easily operated on the job site. It is constructed of specially treated metal to prevent color contamination, and works equally well with plain paints and heavy reflective compounds.

Detailed information on the Airomixer is contained in *Catalog No. W-10.* For your copy, write directly to the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 763.

Expands Line of Diesel Engines

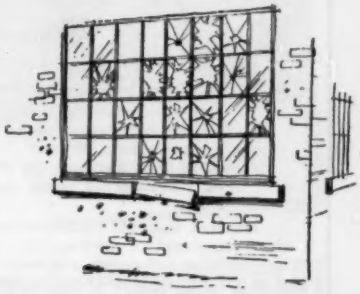
The Enterprise Engine & Machinery Co., a subsidiary of the General Metals Corp., San Francisco, Calif., recently announced the start of an extensive expansion program which will embrace the firm's production, sales, sales promotion and advertising departments.

The company's line of diesel engines will be extended to include power units up to 5,000 hp, where once the largest ratings were in the 2,700-hp category. Engine efficiency, too, is scheduled for improvement, and new products, now in the developmental stage, will be announced in the near future.

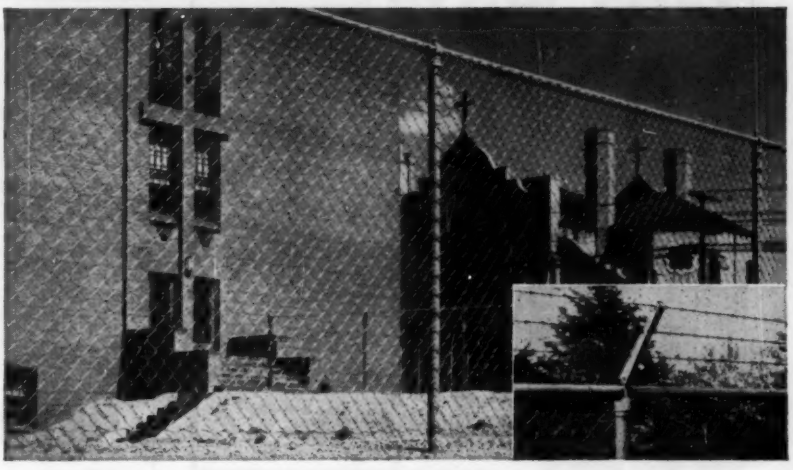
According to P. I. Birchard, vice-president and manager of Enterprise, five new men have been added to the firm's sales force. They include George M. Anger, Allen H. Hogue and Robert Hills, sales engineers, San Francisco office; Roy E. Hoffmann, head of the newly established Jacksonville (Fla.) office; R. T. Baumann, sales engineer, Boston branch staff; and George A. Cashman, sales engineer, Seattle territory. Mr. Cashman was formerly connected with the firm's San Francisco office. W. F. Haddon, manager of advertising, has announced the appointment of two new assistants: Calvin D. Wood and Gelso Gualco.

Additional news from the Enterprise Engine & Machinery Co., discloses a change of address for its Chicago office. Continuing under the direction of Wren Malone, the new office is located at 1737 W. Howard St., Room 211.

VANDALISM
costs millions...
prevent it with



REALOCK FENCE



A sturdy Realock Fence provides an effective deterrent to acts of vandalism against schools and other public buildings.

Realock Fence means ever-present, round-the-clock protection . . . eliminates the need for extra watchmen or guard personnel. Available in a wide variety of types, with or without barbed wire tops. Heavily galvanized after weaving for long-lasting weather resistance.

See your classified telephone directory for nearest sales office or write to any of our three division offices for free estimates.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
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REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

2690

Air Pollution Problems?

The A. I. S. I. Automatic Smoke Sampler measures air pollution automatically 24 hours a day

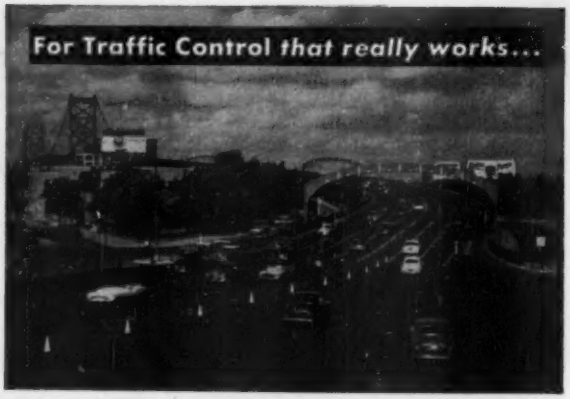
. . . and records at regular intervals of ½, 1 or 2 hours as desired. It can be employed for two purposes:

1. To obtain an historical record of smoke concentrations over an extended period of time.
2. To provide data, as part of micrometeorological studies, from which can be established the source and distribution of smoke and similar particulate matter.

Its low cost makes it feasible to locate a large number of them for complete coverage of a geographical area, and its quietness overcomes any objections to its location in or near residences. Write for literature that gives full details and lists municipalities and industries using it.

RESEARCH APPLIANCE COMPANY

Box 463, West View Road, Pittsburgh 9, Pa.

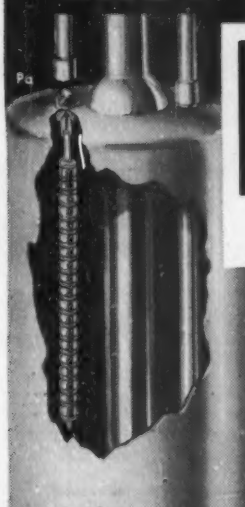


Use The TRAFFIC CONTROL *DENOMINATOR!*

Effective Traffic Control begins with a careful survey. How many? Which direction? What type? Accuracy in answering such questions is of vital importance. For the simplest and most effective method of analyzing traffic conditions accurately hundreds of municipalities now rely on The TRAFFIC CONTROL *DENOMINATOR!* Write to Dept. AC-10.

THE *Denominator Company*, INC.
261 BROADWAY, NEW YORK 7, N. Y.
Manufacturers of Tabulating Machines for 40 years

WATER HEATERS LAST LONGER



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NO GAS
NO ODOR

GUARANTEED PROTECTION FOR TANKS, PIPES, VALVES

ASK YOUR JOBBER • SEND FOR LITERATURE

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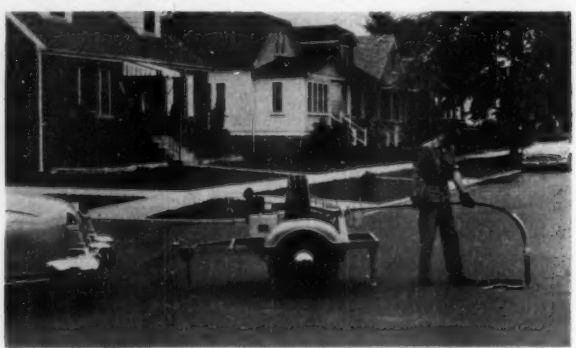
6808 MELROSE AVE., LOS ANGELES 38, CALIF.



New O'Brien SEWER KING (in operation)

NEW O'BRIEN SEWER KING!

New Type Sewer Machine Is Really TWO MACHINES IN ONE

Now you can buy a sewer cleaning machine that uses heavy-duty flexible steel cable, as well as sectional steel rods, for cleaning sewer and pipe lines.

This new machine features the O-B POWER TRANSMISSION making it possible to use flexible steel cable in long lengths. It is not only practical for regular main sewer line cleaning, but can also be used to go through traps and bends in practically all kinds of sewer cleaning work. **The O-B POWER TRANSMISSION does all the hard work in connection with sewer cleaning because, by means of power, the cables and cutting tools are not only turned into the sewer to do the cutting and cleaning, but when the work is done and the line is clean, the retriever can again be used to pull the cable back in the machine.** The long cable length reduces the problem of connecting and disconnecting rods and is stronger and safer.

There is a saving in man power too because this machine **can be operated by one or two men and is mounted on a trailer.**

O'BRIEN Manufacturing Company
Dept. AC-10
5663 Northwest Highway
Chicago 30, Illinois

New Snow Blower Attachment

The Kut-Kwick Corp., noted for its line of power saws, lawn mowers and mobile power units, has gone into the snow removal field. The company introduces a new snow blower attachment that clears snow from sidewalks, crosswalks, and driveways, depositing it onto trucks, or directing it to the side of the road.

The Kut-Kwick blower is attached to one of the company's mobile power units, and operates on the twin rotary vanes principle. Snow is impelled by centrifugal force and air through a blower duct positioned on top of the unit. Thus, the directional control of the snow stream is assured. The company is also offering a 42-inch dozer for clearing snow from walks and lanes. This, too, is attached to the Kut-Kwick unit.

Information on the snow blower and dozer attachments may be obtained directly from the KUT-KWICK CORP., BRUNSWICK, GA., or use the Post Card in this section. Circle No. 745.

CLT

Tax Equalization Appraisals

Fifteen years of unduplicated experience of producing highest quality appraisals for tax equalization purposes.

Client list and brochure upon request.

COLE-LAYER-TRUMBLE COMPANY

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MAN HOURS
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New, FREE BOOKLET
tells about
LOW-COST
BRUSH
DISPOSAL

Read how leading tree surgeons, power companies, municipalities, utilities use Fitchburg Chippers to cut disposal costs up to 50%—create customer good will.

Whatever your brush disposal problem, you will more than likely find the answer right in this new booklet, packed with valuable facts, specifications, and suggestions.

Learn how a Fitchburg Chipper can increase the efficiency of your operation. Mail the coupon for your Fitchburg Chipper booklet today.

TEAR OFF and MAIL

FITCHBURG ENGINEERING CORPORATION
Dept. 1810, Fitchburg, Massachusetts

Send me the New Chipper Booklet!

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City_____
State_____

Take a *good* look

It's human instinct to look again at certain subjects.

It's human nature to *over*look those which lack instinctive interest.

Don't be the victim of a simple error — save a second look for your AIR RAID Warning System — it's not yet too late to reconsider.

Do you actually have an AIR RAID Warning System?

Is it completely effective?

Is it growing with the growth of your community?

A system adequate in planning, may have proved inadequate *in fact!* Growing requirements may have outdistanced *your* plan!

Other matters may have taken your attention, but few if any can be more important.

With this reminder fresh in your mind LOOK AGAIN!

Let us help you with your AIR RAID requirements

T.M

FEDERAL SIGN and SIGNAL Corporation

Formerly: Federal Enterprises, Inc.

8756 S. State Street

Chicago 19, Illinois

"Safe Exit" Movie

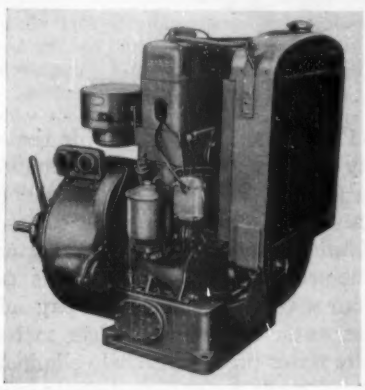
Practically everyone subscribes to the desirability of ample exits from buildings in which people gather. What it means in terms of actual equipment is shown in a 20-minute 16MM black and white sound film available without rental charge. "Safe Exit" was prepared to be helpful to fire and municipal officials and building inspectors.

For booking-request blanks, write VON DURIN DIV., VONNEGUT HARDWARE CO., 402 W. MARYLAND ST., INDIANAPOLIS 9, IND., or you may use the Post Card on the colored page in this section. Circle No. 782.

Low-Cost Gas Engine For Small Sewage Plants

Latest addition to the Nordberg Power Chief series of small diesel prime movers is this one cylinder gas engine; a practical unit for the small sewage treatment plant. It is a medium-speed engine, rated at from 9 to 18 maximum brake hp, in an operating speed range of 800 to 1,800 rpm.

The new heavy-duty, vertical, spark ignition, 4-cycle engine has a 4½-inch bore and a 5¼-inch stroke. It is available as a self-contained, ready-to-operate power unit with clutch power take-off, and as a "packaged" generator set producing up to 10 kw.



This new Nordberg Power Chief is a single cylinder, spark-fired gas engine.

The engine will start and operate on natural gas or gasoline, and offers reliable, low-cost service with minimum maintenance.

For a complete description of the new unit, address the NORDBERG MFG. CO., MILWAUKEE, WIS., or you may use the Post Card on the colored page in this section. Circle No. 756.

COLOR ACCENT LIGHTING

. . . sets the city aglow with eager Christmas shoppers

At Christmas time, color accent lighting with Amplex Colorbeams brings out the city's charm . . . brings out the city's shoppers. And city residents aren't the only ones attracted to a striking Colorbeam lighting display. The experience of hundreds of city fathers throughout the country clearly demonstrates that residents from neighboring towns shop the city with the most attractive Christmas lighting . . . the city with Amplex Colorbeam lighting.

Available in 14 striking colors and a full range of sizes and wattages, sales-producing Colorbeams actually have a rated average life of 2000 hours! There's no problem of fading, chipping, or cracking colors . . . because Amplex color is an integral part of the glass. No dwindling light intensity, either, because the sealed-in, pure silver reflector linings guarantee maximum light always. This Christmas, solve your color lighting problems and *all* your lighting problems with Amplex . . . the unsurpassed lighting line that lights the way to more city business.

R-40
for indoor use

PAR-38
for outdoor-indoor use

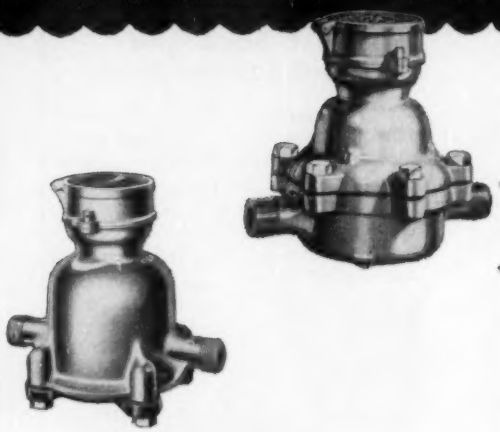
R-30
for indoor use

amplex Corporation, Dept. AC-10
111 Water St., Brooklyn 1, N. Y.

IT'S MORE THAN AMPLE
. . . IT'S
amplex

Water is vital...

BADGER meters conserve it BETTER!



SANITATION is so vital to life that a city of three-quarters of a million people actually uses 134,000,000 gallons of water daily! In thousands of communities, famous Badger meters make certain that homes and industrial projects get their fair share of the supply . . . pay only for the water they use. Badger meters measure water precisely . . . help eliminate waste . . . make water departments more efficient and self-supporting. And, as waterworks men verify, Badger meters do the job dependably . . . serve for years with little or no attention.

BADGER
Water Meters

Badger Meter Mfg. Co.
Milwaukee 45, Wisconsin

"Measures the water of the world"

Motorcycles Get Royal Approval

Surrounded by a group of Chicago's finest, Emperor Hailie Selassie inspects a Harley-Davidson police motorcycle.

Twenty-two policemen will be enforcing Ethiopian traffic laws on Harley-Davidson motorcycles soon, thanks to the recent visit of Emperor Hailie Selassie to the United States.

During His Majesty's visit to Chicago, he noted with interest the police motorcade that accompanied his party, and was favorably impressed by the efficiency of the Harley-Davidson motorcycles. He said he had "never seen such beautiful motorcycles, handled so expertly."

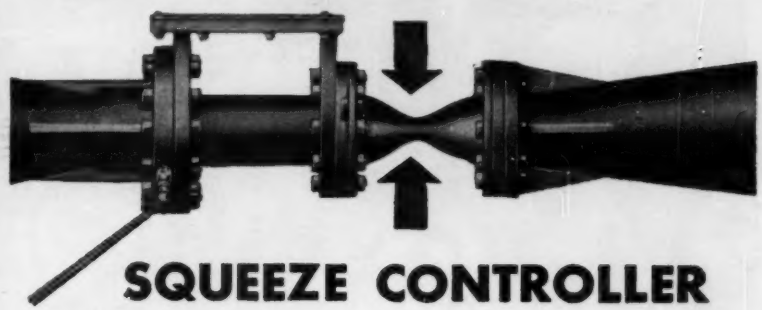
The Emperor's approval resulted in an order for twenty-two OHV motorcycles to be sent to Ethiopia by the HARLEY-DAVIDSON MOTOR CO., MILWAUKEE 1, WIS. The units are police models complete with windshield, safety guards, and siren. Eleven units will be in red, and the other half in aluminum.

Improved Copying Equipment

AZOGRAPH is an easier way to produce copies, a faster way to run off hurry-up or confidential handwritten messages, a lower-cost way to produce copies. Furthermore, it gets rid of the stain problem. It makes copies of bids, specifications, estimates, graphs and maps. The electric model produces 100 copies per minute and has a feed table capacity of 500 sheets of paper.

For a new, descriptive folder write the A. B. DICK CO., DEPT. AC-1054, 5700 TOUHY AVE., CHICAGO 31, ILL., or you may use the Post Card on the colored page in this section. Circle No. 760.

New! **SIMPLEX**



SQUEEZE CONTROLLER

Accurately Controls Flow of Sewage, Sludge, and Trade Wastes

For the first time, heavy viscous flows can be closely regulated without affecting the moving parts of the controlling device. This solves many problems...makes possible entirely new plant designs.

The core of this unit is a time-tested venturi tube with a special throat section of flexible rubber. Differential pressure in the venturi is transmitted to a Simplex Type H Rate Setter which both measures and maintains the rate of flow desired.

If flow tends to change, Type H Rate Setter actuates the motor-driven clamping device to adjust the flexible throat area . . . quickly returns flow to the control point.

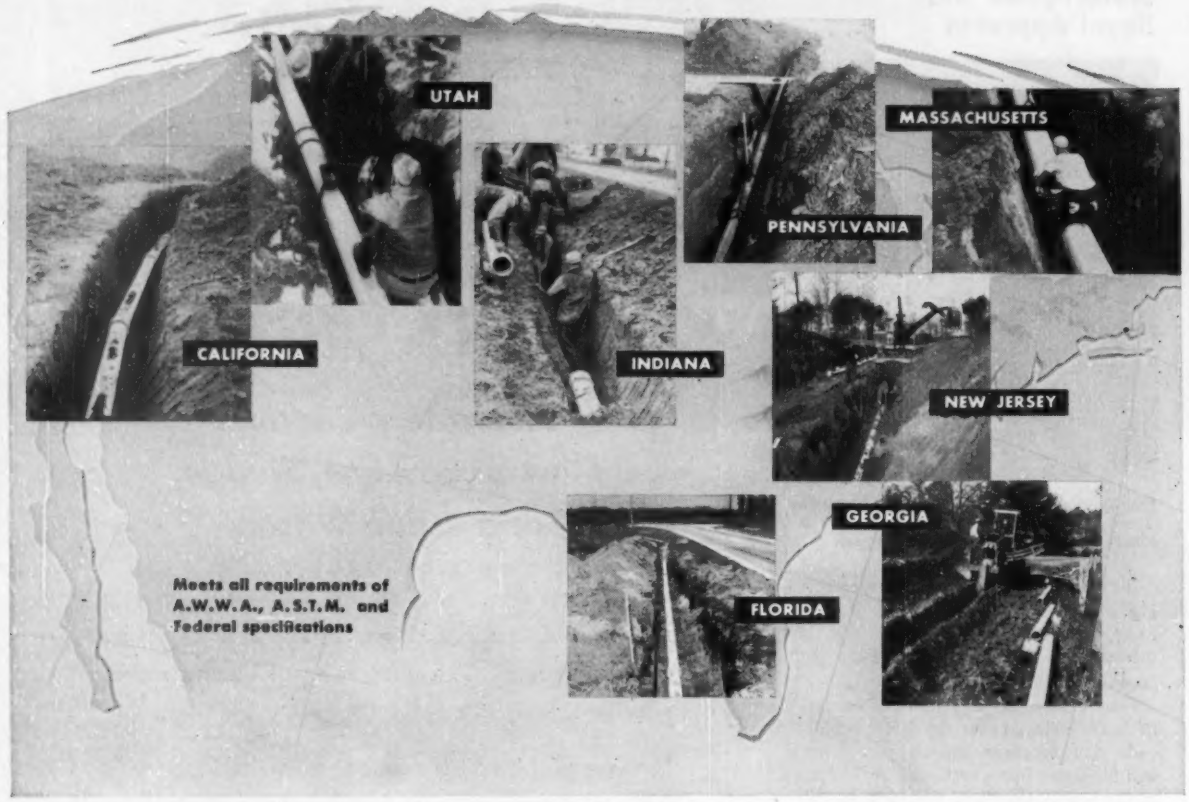
Look at these advantages. A Simplex venturi tube, the most accurate form of primary device, does double duty. It measures as it controls. The throat section is self-scouring. Viscous fluids contact no moving parts.

Write for complete details today!

Simplex Valve & Meter Company
6789 Upland Street, Philadelphia 42, Pa.

SIMPLEX®
VALVE AND METER COMPANY

Setting new standards – everywhere...



Transite Pressure Pipe and Ring-Tite Coupling speed water line assembly, lower installation cost

IN COMMUNITY after community, proof that Transite® Pressure Pipe and Ring-Tite® Coupling speed water line assembly and cut installation costs is reflected in such contractor comments as these:

"Exceeded by far, the speed anticipated under job conditions."

"Based bid on 400 feet a day, actually laid over 700 feet."

"Established an entirely new concept of installation savings."

These new records for speedy installation have been accomplished despite adverse terrain, weather conditions and the presence of muck and mud in many of these locations. That is why, whatever your water line problem it will pay you to learn all about Transite's many advantages.

* * *

Write for the new Transite Brochure, TR-142-A, Johns-Manville, Box 60, New York 16, N. Y.

JOHNS-MANVILLE PRODUCTS

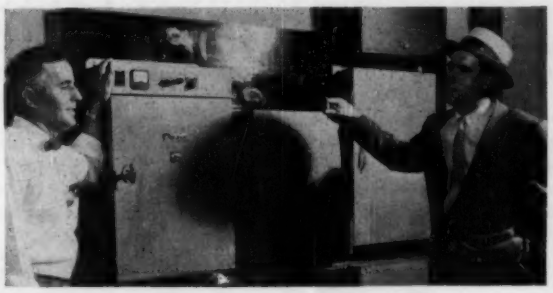
Johns-Manville TRANSITE PRESSURE PIPE

THE ASBESTOS CEMENT PIPE WITH THE NEW RING-TITE COUPLING

Fire Stations Install New Emergency Generators

Two city fire stations in Minneapolis, Minn., have been equipped with Onan emergency generators, according to the city's fire department. These stations house the main radio transmitter receivers and auxiliary transmitter receivers, remotely controlled from headquarter consoles by fire alarm underground conductors.

The electric generating plant installed at Fire Station No. 8, is an Onan Model 10CW-4R air-cooled unit, providing 10,000 watts of 60-cycle, 120/208-volt, 3-phase, 4-wire electric service. It is equipped with dual transfer control which starts the generator automatically in the event of power interruption, and automatically stops the unit when commercial service is resumed. In case of a city gas failure, the engine-driven plant may be operated on gasoline.



E. L. Heath, Minneapolis superintendent of communications, inspects the dual line transfer controls with Onan regional manager, W. B. Flaherty.

Detailed information about Onan emergency generators is available from D. W. ONAN & SONS, INC., 8365 UNIVERSITY AVE., SE., MINNEAPOLIS 14, MINN., or use the Post Card on the colored page in this section. Circle No. 767.

Expedites Airport Traffic

Today's increased airport traffic is forcing the adoption of standard regulations, lighting and markings for all runways, taxiways, destinations and intersections, according to STANDARD SIGNS, INC., 3190 E. 65TH ST., CLEVELAND 27, OHIO.

An efficient marker that meets CAA requirements for destination and intersection signs is the new Sams Taxi Guidance Sign, available in single and double units which are easily combined to form multiple units. These signs are housed in aluminum, rectangular box-type constructions, mounted on one or more standard 2-inch breakable couplings.

Each letter or symbol is contained in a standard 14-inch square aluminum alloy panel, which is removable and interchangeable. Characters are identified by an illuminated orange-yellow plastic on a black background, providing 24-hour visibility. The single unit is 14½ inches long; the double unit, 29 inches long.

A complete description of Sams Taxi Guidance Signs may be obtained directly from the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 755.

You Get Greater Profits from Smaller Investment with this All-Purpose Unit

SCHRAMM AIR COMPRESSOR..TRACTOR..BACKHOE..LOADER
ENTIRELY DESIGNED & BUILT BY SCHRAMM, INC.

SCHRAMM BACKHOE AND SHOVEL
- Digs faster than cable-operated backhoe
- Twice the power of backhoes on agricultural type tractors
- With shovel bucket, operates smoother, outperforms all other ¼ yard shovels

SCHRAMM LOADER
- Bucket capacity full cubic yard
- Lifts 2500 pounds

The Schramm Pneumatractor with new Backhoe and Loader gives you a 125 c.f.m. air compressor . . . tractor . . . backhoe . . . shovel . . . loader . . . crane . . . sweeper . . . snow plow . . . bulldozer . . . backfill tamper . . . platform scaffold . . . winch . . . auger . . . wagon drill!

For complete details, write today for illustrated booklet.

SCHRAMM, INC.
The Compressor People
WEST CHESTER • PENNSYLVANIA

Schrammair YOUR JOB!

IT WORKS WONDERS IN RUBBISH COLLECTION-

300 to 400% increase in efficiency

75% decrease in handling costs

One Truck-Mounted
Dempster-Dumpster Handles Scores
of Containers... All Designs... All Sizes

With the Dempster-Dumpster System, one truck-mounted Dempster-Dumpster accomplishes more than several conventional dump trucks. You eliminate trucks standing idle. You eliminate re-handling of materials. You eliminate loading crews. You increase efficiency, sanitation and good housekeeping with this Dempster-Dumpster System—the lowest cost method of municipal bulk trash and rubbish collection ever devised.

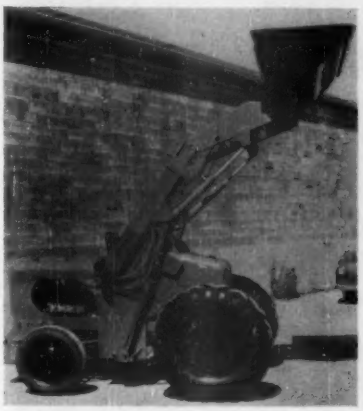
It's like having one truck with scores of bodies. One truck-mounted Dempster-Dumpster serves scores of detachable containers. These containers range from 2 to 21 cu. yds. capacity for use with recommended type Dempster-Dumpsters. Each container is designed to meet your requirements. You simply place these containers at convenient trash and rubbish accumulation points outside or inside buildings at hotels, schools, hospitals, business establishments (drug stores, grocery stores, restaurants, etc.), market, housing and apartment areas, etc. As each is loaded, it is picked up on pre-arranged schedule . . . hauled and dumped. Entire operation is handled by hydraulic controls in cab by only one man, the driver.

The list of cost-minded municipalities using the Dempster-Dumpster System includes Asheville, N. C., Atlanta, Lexington, Ky., Baltimore, Birmingham, Boston, Cincinnati, Wyandotte, Mich., Denver, Norfolk, Pensacola, Fla., Richmond, New Orleans and many, many others. Write to us now for complete information. Manufactured exclusively by Dempster Brothers, Inc.

Representatives in principal cities throughout the United States, Canada and foreign countries. There's one near by to serve you promptly.

DEMPSTER BROTHERS, 8104 Dempster Bldg., Knoxville 17, Tennessee

New ¾-Yard Loader Added to Loadall Line

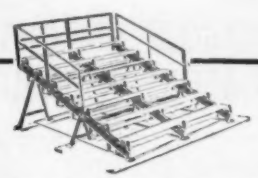


Newest addition to the Lessmann Loadall line is the Model GFT, a ¾-yard loader featuring front wheel drive and rear wheel steering. The unit is designed with a shorter turning radius which facilitates lifting operations in confined areas.

The operator of the Model GFT can fill the bucket without moving the tractor forward through the use of the patented Lessmann power crowd. Four-wheel brakes hold the tractor in place while the bucket is being forced into hard material.

The bucket of the new loader has a 22 cubic foot struck capacity and a 28 cubic foot heaped capacity. The loader features full reversing in speeds ranging from 2.0 to 20 mph, and a torque converter with heat exchanger which multiplies engine torque and cushions shock on the loader power train.

Model GFT is made by the LESSMANN MFG. CO., 20TH AND EASTON BLVD., DES MOINES 4, IA. For a complete description, write the company directly, or you may use the Post Card on the colored page in this section. Circle No. 769.



Single Section Model 6 Portable Bleacher

PORTABLE SEATING FOR EVERY OCCASION

With Hussey Patented Portable Steel Bleachers and Grandstands, one set of seats will take care of both your indoor and outdoor needs. They cannot collapse and can be erected and taken down faster and easier than any other stand on the market. Low in cost. 6, 10 and 15 tier 12 foot sections IN STOCK. Other sizes made to order.

FREE CATALOGS AND COMPLETE INFORMATION ON REQUEST. WRITE TODAY.

ASK ABOUT THE NEW HUSSEY ROLL-OUT GYM SEATS

Iron-workers — HUSSEY — Since 1835

HUSSEY MFG. CO., INC.
546 R. R. Ave., N. Berwick, Maine

Also mfrs. of Water Sports Equipment, Flag Poles, and Miscellaneous Iron.

WE HAVE NEW FIBERGLASS TRAFFIC and DIRECTION SIGNS

Lake Shore Markers, Inc.
P.O. Box 59
Erie 1, Pennsylvania
Telephone: 4-0189

WRITE FOR FREE CATALOG AND SAMPLE OFFER

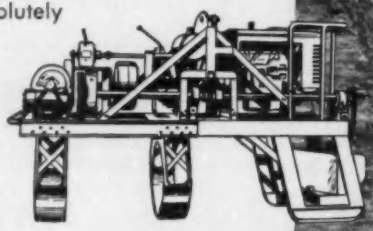
You don't have to stop traffic . . .

. . . to bore road crossings

with the **CROSE** *auger-type*

ROAD BORING MACHINE

Installs casing as boring progresses — eliminates cave-ins. Absolutely prevents settling of concrete slab highways or railroad beds. Extremely accurate in alignment. Adaptable to all sizes of casing from 3" to 34".



M.J. **Crose** *Manufacturing Co., Inc.*

2715 DAWSON ROAD • TULSA, OKLAHOMA

DEALERS IN: HOUSTON • NEW YORK • NEWARK, N. J.
EDMONTON • DENVER

HERE IS A REVOLUTIONARY NEW
POCKET-SIZE
LEAK DETECTOR

THAT WILL PAY FOR ITSELF IN ONE COMPLETE OPERATION

Sensitive—as only modern electronics knows sensitivity.

Compact—weighs only 2¼ pounds and fits conveniently into a coat or jacket pocket.

Simple — any maintenance man quickly learns how to use it. In one typical small city, meter readers used them to find an average of three leaks per day.

Rugged — Operating records show it working perfectly in all sorts of weather, even when handled roughly by different operators.

Efficient—one man can do a complete job of leak detection well. In one small city, these little detectors traced out leaks amounting to almost 10% of the daily pumpage.

Write for prices and complete information.

PRECISION ELECTRONICS CO.

9101 King St. **Franklin Park, Ill.**

LEADING MANUFACTURER WANTS MANUFACTURERS AGENTS OR DEALERS

ESTABLISHED MANUFACTURERS AGENTS OR DEALERS NOW SELLING COUNTIES, CITIES, TOWNS AND CONTRACTORS WANTED TO REPRESENT LEADING MANUFACTURER, ESTABLISHED OVER FIFTY YEARS, IN THE SALE OF:

"GROTELITE" REFLECTIVE SHEETING,
REFLECTORIZED TRAFFIC SIGNS,
PLAIN ENAMELED TRAFFIC SIGNS,
PLASTIC REFLECTORS, BARRICADES,
DELINEATORS, DANGER MARKERS, ETC.

THIS IS A FAST-GROWING MARKET OFFERING LIBERAL EARNINGS WITH MINIMUM OR NO INVESTMENT IN INVENTORY.

COVER FULLY IN FIRST LETTER, PAST EXPERIENCE, NUMBER OF SALESMEN, TERRITORY WORKING AND OTHER LINES HANDLED.

The Grote Manufacturing Co., Inc.

Sign Division

(Established 1901) **BELLEVUE, KENTUCKY**

New Ceramic Pavement Marker Buttons

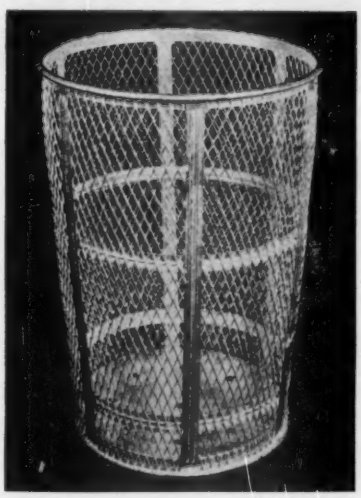
A new ceramic pavement marker button is introduced by the PORCE-LINE CO., 1515 HICKORY ST., DALLAS, TEXAS. This marker is said to outlast the metal button made by this company, particularly on crosswalks. Installation is simple and inexpensive and hundreds are installed in the Dallas area.

For full data on the new marker button, write directly to the company, or you may use the Post Card on the colored page in this section. Circle No. 743.

Move Sales Office

The eastern sales office of the Universal Concrete Pipe Co. has been relocated at the company's plant at 85 Harbor Rd., Port Washington, L. I., N. Y. New mailing address of the office is P. O. Box 728, Port Washington, N. Y.

New Refuse Container Wears Longer



The Wheeling Corrugating Co. uses expanded metal to construct these long-wearing refuse containers. Thus, the baskets are sturdy enough to withstand severe wear, yet light enough to be easy to handle.

According to the manufacturer, the new Wheeling baskets were tested by dropping them 500 times on a hard surface, simulating actual conditions encountered by sanitation workers. Instead of loosening, reports the company, the bottom of the pan locked itself into the vertical staves and the expanded metal. There was no sign of deformation.

The new, heavy-duty refuse container is 32 inches high, and has a top diameter of 24 inches. It weighs 30 pounds ungalvanized and about 34 pounds galvanized. The rolled top edging is welded to the expanded metal over its entire perimeter, while reinforcing bands are compression welded to the metal at every point of contact.

Small, diamond-patterned openings in the basket are large enough to permit drainage and ventilation, yet sufficiently small to prevent the escape of refuse. A dished bottom also facilitates drainage, and six equally spaced vertical ribs, welded to the expanded metal at all contact points, prevent bulging.

Write the WHEELING CORRUGATING CO., WHEELING, W. VA., for complete information, or you may use the Post Card on the colored page in this section. Circle No. 762.

THE FISH WHICH GOT AWAY MAY BE EXAGGERATED

BUT 2" & 2¼" CAST IRON PIPE

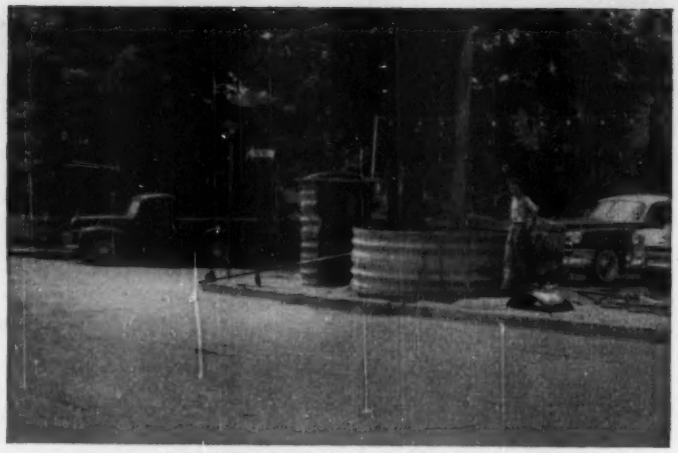
18 ft. LONG IS A FACT!

McWANE-PACIFIC DeLavaud

Here is Small Diameter Cast Iron Pipe as modern as a jet plane. For many years, 2" and 2¼" Cast Iron Pipe has been cast in 6', 9' or 12' lengths. McWane-Pacific DeLavaud 2" and 2¼" pipe is cast centrifugally in metal molds in *18-FOOT* laying lengths. In pipe line construction, it lays FAST, is easy to handle by two men, reduces construction costs. Furnished in bell-and-spigot or Boltite mechanical joints with complete line of fittings. Pipe and fittings may be uncoated, coated or cement lined. For complete information, wire or write McWANE CAST IRON PIPE COMPANY, Birmingham, Alabama, or PACIFIC STATES CAST IRON PIPE COMPANY, Provo, Utah. (Sales offices in principal cities.)

McWANE PACIFIC PIPE *Lasts for Centuries*

Tunnel helps clean-up job on Ohio River



Inconspicuous shaft eliminates traffic congestion and torn-up pavements.

Looking down Armco Liner Plate shaft to mouth of tunnel.

Dump cart on rails hauls out dirt as Armco Plates are assembled.

Cooperating in the regional clean-up of the Ohio River, the city of Charleston, West Virginia, cut costs on a big intercepter sewer project by tunneling the job with Armco Liner Plates.

Sewage discharged into the Kanawha River will be processed through a sewage treatment plant that is part of the clean-up project. One of the first problems was that of installing intercepter sewers about 25 feet deep under two heavily traveled streets. Open cutting would have torn up sidewalks and pavements, disrupted traffic and business. Economy and convenience were prime considerations in tunneling with Armco Liner Plates. Tunnels were driven in both directions from shafts sunk every 400 feet. The tunnel required almost 4,000 feet of 12-gage, 48-inch diameter Armco Liner Plates. As the tunnel was completed the Armco Liner Plate used in the shafts was salvaged for reuse.

You, too, may benefit by using Armco Liner Plates as a solution to your own sewer problems. They are ideal for tunnels, shafts, caissons, conduits, underpasses, aggregate bins and for lining existing failing structures. Write for details. Armco Drainage & Metal Products, Inc., 1894 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

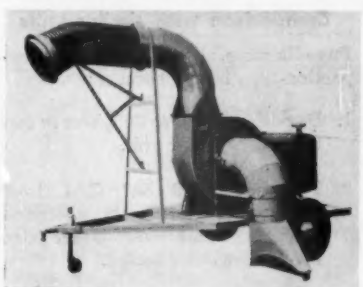
ARMCO LINER PLATES

Aerial Survey Speed Record

The aerial survey and compilation of topographic maps of 125 miles of turnpike route proved a routine operation for Jack Ammann Photogrammetric Engineers, Broadway at Tenth, San Antonio 5, Texas. The turnpike is being built by the Kansas Turnpike Authority to designs of the consulting firm of Howard, Needles, Tammen & Bergendoff.

The speed of conduction and completion of the survey is believed to have established some sort of a record, according to Louis A. Woodward, vice-president of the photogrammetric firm. The project included a strip of topography 2,000 feet wide in most places, although some 10 or 12 turnout areas required widths of a mile or more. The entire job required only 88 calendar days. This included aerial photography, ground control survey, photogrammetric plotting, editing, and final drafting.

Speeds Leaf Collection from Street Curbs



New suction leaf loader is mounted on a 2-wheeled, rubber-tired trailer.

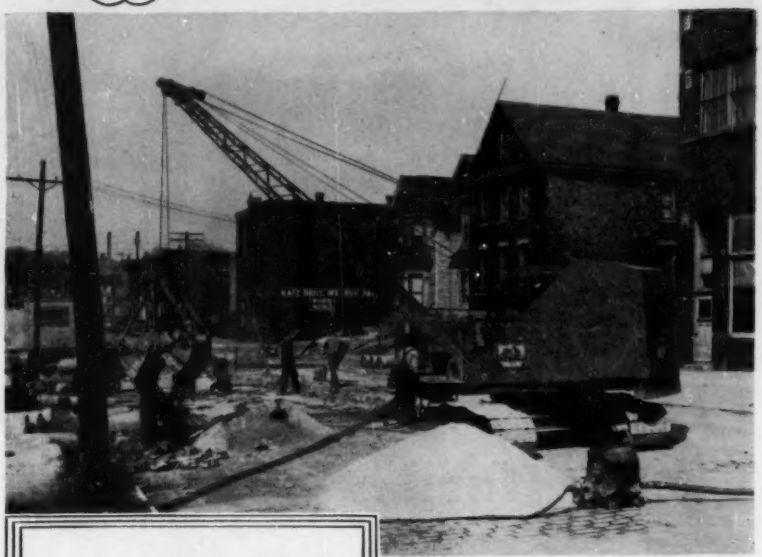
This new leaf loader has been equipped with a suction fan that picks up leaves along street curbs, pulverizes them, and deposits them into the truck. The loader is quickly attached to any covered collecting truck. It enables two men to load some 80 cubic yards of leaves per day.

In addition to leaves, the suction loader picks up bottles, cans, and other bulky debris. All are broken and crushed for compact loading. With attachments made in the city's own shop, the unit may be used for removing sand, cleaning tanks, and for dusting operations as well.

THE CAROLINA BLOWER CO., GREENSBORO, N. C., makes the new suction leaf loader. For a complete description, write the company directly, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 779.

JOB-PROVED OVER 5300 BUILT AND SOLD

Bantam – MOST VERSATILE MACHINE YOU CAN OWN



PARTIAL LIST OF SATISFIED OWNERS

Youngstown, Ohio • Seattle, Washington • Minneapolis, Minnesota • San Diego, California • Tampa, Florida • Miami, Florida • Rockford, Illinois • Cedar Rapids, Iowa • New Orleans, Louisiana • Washington, D. C. Detroit, Michigan • St. Paul, Minnesota • Augusta, Maine Canton, Ohio • Philadelphia, Pennsylvania • Houston, Texas Norfolk, Virginia • Madison, Wisconsin • Rochester, Minnesota Redwood City, California • Missoula, Montana • Santa Ana, California

Thousands of satisfied owners, including those listed at left, are making their equipment dollars go farther with a Bantam. Here's why. One Bantam, with 9 fast-change attachments, handles all these jobs:

STREET & ALLEY REPAIRS • BUILDING HIGHWAY APPROACHES • SANITARY & STORM SEWER INSTALLATIONS • SPOT REPAIRS ON SEWERS & MAINS • MATERIALS HANDLING IN YARDS • BUILDING & MAINTENANCE OF WATER PURIFICATION SYSTEMS • BUILDING SEWER BEDS • AIRPORT RUNWAY & DRAINAGE PROJECTS • HANGER CONSTRUCTION • EARTH MOVING, PARK & GOLF COURSE PROJECTS • BRIDGE MAINTENANCE BUILDING & REPAIR

Low initial cost . . . low operating cost . . . low upkeep and repair . . . that's the economy of owning a Bantam! There's a Bantam mounting that will fit your needs EXACTLY. Bantam mounts on Crawler . . . Crane Carrier . . . Remanufactured truck . . . or on your own truck.

WRITE FOR COMPLETE INFORMATION, SPECIFICATIONS AND PRICES AND FOR THE NAME OF YOUR NEAREST SCHIELD BANTAM DEALER. ACT NOW!

SCHIELD Bantam C-4

COMPANY • 234 Park St., Waverly, Ia., U.S.A.

World's Largest Producer of Truck-Cranes & Excavators

IF your town has held off installing compaction-type refuse collection because you felt this modern system too expensive for the number of people you have to serve — note these reports from 3 small Pittsburgh (Pa.) suburbs.

Here's proof that EVERY community can afford modern refuse collection

RANKIN — a city of 7,000 — used to collect refuse with the equivalent of 2½ open-type trucks with crews (2 community-owned trucks and 6 men worked a full schedule *every* week . . . 1 rented truck and 3 men worked every *other* week). Now, *one* 9-yard St.Paul Pax-all, with a driver and 2 collectors, handles the entire refuse collection on a 5-day, 40-hour week. Each home is serviced once a week.

LEETSDALE — a town of 2,500 — and **EDGEWORTH** — a town of 1,500 — each operated 2-open-top trucks and 6 men. Each is now able to do the job with one 9-yard Pax-all and 3 men. Leetsdale makes its all-home collection in 3 working days a week . . . Edgeworth in 2. In spare time, both communities use their collection crews for other work around town.

Comparison with old system

Initial purchase of the *enclosed* compaction-type Pax-all over *open-type* trucks was made by these 3 communities because:

1. As the above report shows, 1 Pax-all handles the *complete* refuse collection job more efficiently than 2 or more trucks.
2. Savings in labor, equipment and other operating expenses easily pay for the Pax-all in less than 6 months.
3. Fully enclosed Pax-alls provide cleaner, more sanitary refuse collection . . . eliminate complaints formerly caused by flies, blowing papers, and stinking, dripping, germ-laden garbage.

Town	Formerly used	Now use
RANKIN (pop. 7,000)	3 trucks 9 men	1 Pax-all* 3 men
LEETSDALE (pop. 2,500)	2 trucks 6 men	1 Pax-all 3 men
EDGEWORTH (pop. 1,500)	2 trucks 6 men	1 Pax-all 3 men

Comparison with similar units

Pax-alls were chosen over other compaction-type bodies because:

1. Pax-alls *cost up to 30% less to buy* than any similar unit.
2. Pax-alls mount 84" C/A truck chassis, which saves an additional $300 per unit over larger sizes needed for other bodies.
3. Pax-alls' lighter weight assures *accumulative* savings in gasoline, tires, taxes, etc.
4. Pax-alls' simplified compacting mechanism, plus use of only *one* hydraulic cylinder for handling all loading, compacting and dumping assures lower maintenance costs than on any other loader.

For additional information, contact your local St.Paul Distributor. Just write St.Paul Hydraulic Hoist, Customer Service Dept., 36125 Main St., Wayne, Michigan.

*Pax-all is the registered trademark of St. Paul Hydraulic Hoist SP-PC-6

St. Paul HYDRAULIC Pax-all* refuse collection systems

"Dome Top" Receptacle Facilitates Waste Disposal

It doesn't matter where you place the new Solar Jet waste receptacle—against a wall or in a corner—the unit remains easily accessible in a variety of locations. This is due to the new, stainless steel, dome top, which swings freely inside the outer shell in any direction. Thus, waste disposal is possible from any point of approach.

The dome top is the only moving part of the Solar Jet, and it is securely attached to a ball suspension joint located beneath the point of balance. The one-piece outer shell is of white baked enamel finish, and is easily removed. It is strengthened by stainless steel bands which encircle the top and bottom of the receptacle. No rough edges or corners mar the smooth, cylindrical shape.

The galvanized steel inner container has handles for easy emptying, and rests on three sturdy stainless steel legs. These legs hold the receptacle ⅞-inch off of the ground or floor. The entire unit is 15 inches in diameter and 30½- or 36 inches high.

Solar Jets may be effectively used in the lobbies, corridors, waiting rooms and washrooms of public buildings, and in school lunchrooms as well. They are made by the SOLAR-STURGES MFG. DIV., PRESSED STEEL CAR CO., INC., DEPT. D-9, MELROSE PARK, ILL.

For complete information, address the company, or you may use the Post Card on the colored page in this section. Circle No. 752.

City Engineer Wanted

Unusual opportunity for graduate civil engineer, or equivalent, with professional license, in southern Pennsylvania city. Experience is essential in land surveying, street layout, sanitary and storm water drainage, and related work. Experience is desirable in application of zoning laws and subdivision control.

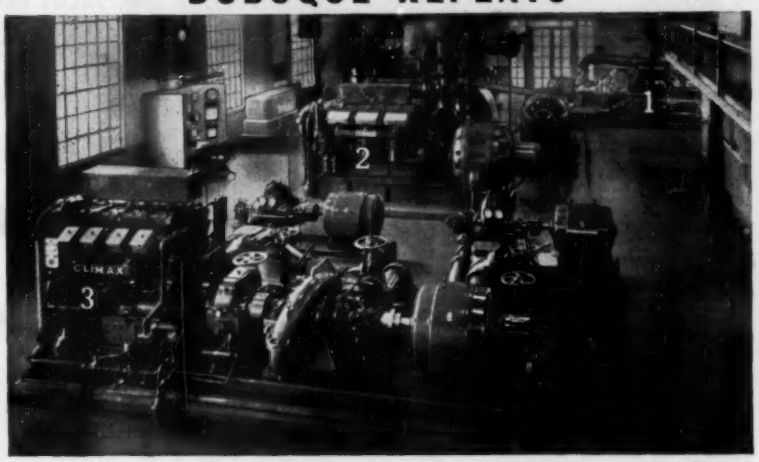
Successful applicant would be in responsible charge of Engineering Department, supervising survey crew and draftsmen; and would be expected to deal with the public in the many problems arising in the operation of a City Engineering Department.

Attractive salary, pleasant working conditions, permanent position for right man. No political interference. Man under 40 preferred. Reply should state age, background, and specific experience in the above-mentioned fields.

Reply to Box 382

The American City, 470 Fourth Ave., New York 16, N. Y.

DUBUQUE REPEATS



A satisfied customer is worth more than money in the bank—We have thousands of them—The City of Dubuque, Iowa is an outstanding example.

1. INSTALLED 1939. Climax 8 cylinder gasoline engine direct connected to a 1200 R.P.M. high lift pump normally driven from the other end by a 200 H.P. synchronous motor.

2. INSTALLED 1949. Climax 12 cylinder V-type engine direct connected to a 625 KVA, 2300 volt, 1200 R.P.M. generator for starting and operating large motor driven pumps.

3. INSTALLED 1952. Climax 8 cylinder V-type engine connected through a speed increaser and free wheeling coupling to a 2400 GPM, 260 TDH, 1800 R.P.M. pump normally driven from the other end by a 200 H.P. synchronous motor. During emergencies the engine can operate the pump at rated capacity against a TDH of 350 ft.

We appreciate the confidence of the City of Dubuque and J. J. Hail, The Water Department Superintendent, and are proud of the fact that the performance of Climax engines has justified their repeat orders.

climax

ENGINE AND PUMP MFG. CO.
208 So. La Salle St.
CHICAGO 4, ILLINOIS
Factory–Clinton, Ia. *District Office*–Dallas, Tex.

THIS METER gives you

1. PRECISION ACCURACY
Calmet's oscillating piston is semi-floating, precision balanced, and measures with precision accuracy the various flows to the smallest drip.

2. EXTREME LONG LIFE
Calmet's slower moving piston and gear train means less wear on precision parts, hence long life accuracy. Its simple design assures years of service with a minimum of attention.

3. LOW UPKEEP
Calmets are easy to take apart, easy to repair. The split case design with spuds in the base permits quick removal of working parts for cleaning or inspection without breaking the line connection.

4. FROST PROTECTED
When the meter freezes or pressure exceeds 450 pounds, Calmet's exclusive FROST PROOF BOLTS provide maximum protection against damage to working parts.

"THE METER YOU CAN COUNT ON"
MANUFACTURED BY
WELL MACHINERY & SUPPLY CO., INC.
FORT WORTH, TEXAS

CALMET

"SIGNS OF PROGRESS"

Pittsburgh's Golden Triangle, already famous, is being further beautified. The march of civic progress in an industrial city is pointed out by easy-to-read, enduring ***"FERRO"*** street signs.

In many interesting locations you'll find ***FERRO*** signs . . . visible day or night; permanent porcelain enamel fused on finest steel.

On any street, road or highway, ***FERRO is the sign of good government.*** For full details, write:

FERRO ENAMELING CO.
1100 Fifty-seventh Avenue, Oakland 21, California

THE WAUPUN LEADER-NEWS

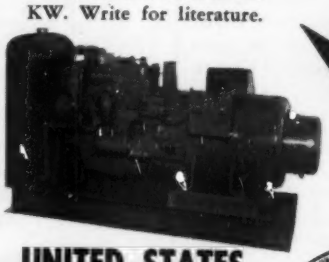
Winds Destroy Two Area Barns

Bad Windstorm Wrecks Trees and Property; Phones and Power Out

Electric Service Suffered Badly and Is Not Fully Restored; Several Garages, Homes, and Cars Damaged Badly But No People in City Injured

take the **DISASTER** out of Power Failures with this

A "U.S." Standby engine-generator is your best protection against loss due to power failure. The complete "U.S." line includes units from 300 watts to 200 KW. Write for literature.



UNITED STATES MOTORS CORP.
353 Nebraska St.
Oshkosh, Wis.

UNITED STATES MOTORS CORPORATION — LIGHT US POWER — OSHKOSH • WISCONSIN

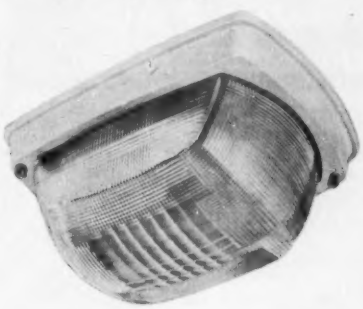
New Loaders for Large and Small Tractors

Two new front end loaders, one for the large Fordson Major Diesel tractor, and the other for all models of Ford and Ferguson tractors, are announced by the SHAWNEE MFG. CO., INC., 1947 N. TOPEKA BLVD., TOPEKA, KANS.

The heavy-duty loader designed for use with the Fordson tractor is known as the "Loadmaster," and the smaller unit has been designated the "Special." Both models feature a 2-pin installation for quick removal, and are constructed without bolts. Double acting cylinders and an over-size hydraulic system increase the life of the loaders and assure greater working ability.

The "Loadmaster" and the "Special" are fully described in new literature from the Shawnee Mfg. Co. Write directly, or use the Post Card on the colored page in this section. Circle No. 771.

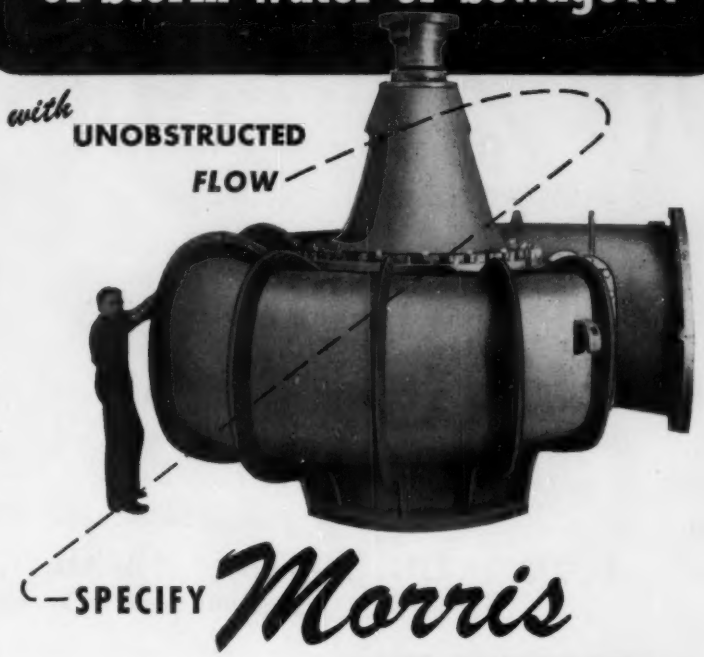
Indoor Lighting Unit



A new luminaire provides glare-free lighting of long, narrow, indoor areas such as corridors. By means of the prismatic glass Refractor, the useful light is redirected in all directions—up to the ceiling and across the walls, as well as down to the floor. The result is balanced illumination with high visibility.

For technical details about the No. C-824 Holophane corridor lighting luminaire, write HOLOPHANE CO., INC., 342 MADISON AVE., NEW YORK CITY, or you may use the Post Card on the colored page in this section. Circle No. 776.

To handle LARGE Capacities of Storm Water or Sewage...



SPECIFY *Morris*

MIXED FLOW PUMPS

The most practical type of pump in the larger sizes, for abrasion resistance and ability to handle large stringy solids without clogging.

In the Morris Mixed Flow sewage pump there are no guide vanes in the suction, nor stationary diffusion vanes on the upstream side of the impeller, to catch longer fibrous material. Enclosed impellers which are most generally used are better able to withstand the abrasive action of grit and dirt. No internal bearings in contact with the sewage. Initial capacity and efficiency are maintained over longer period of time.

No other pump is so successful in maintaining freedom from clogging where large capacities and high speeds are required. In both vertical type (illustrated) and horizontal type, Morris Mixed Flow pumps have capacities ranging up to 150,000 G.P.M. In city after city, engineers prefer Morris pumps for efficiency, dependability, long life and economy. Every unit is backed by 84 years' experience in hydraulic engineering.

Write for your free copy of bulletin 178, describing Morris Mixed Flow Pumps.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

MORRIS *Centrifugal Pumps*

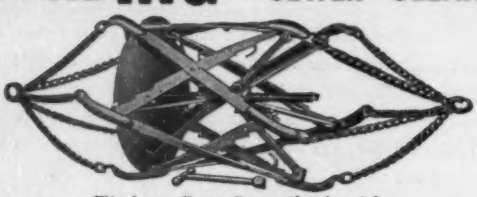
7 Reasons Why More Than 6,000 Cities, Towns and Villages in the United States Use AUTOMATIC VOTING MACHINES

- Voting is easier and quicker
- Secrecy is assured the voter
- There are no spoiled ballots
- The count is mechanically accurate
- The results are immediately known
- There is a permanent record
- Election expenses are reduced

If your community is still using the old-fashioned paper ballot, investigate the possibility of installing automatic voting machines before your next election.

AUTOMATIC VOTING MACHINE CORPORATION
Jamestown, New York
— *Since* 1898 —

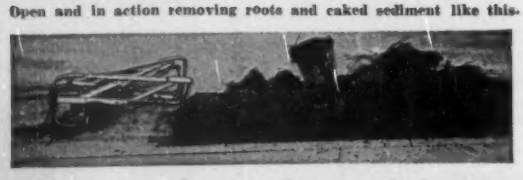
EXPANDING ROOT CUTTER SEWER CLEANER



Fits in on Every Sewer Cleaning Job
Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Open and in action removing roots and caked sediment like this.



Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. Nappanee, Ind.

Nite-Bright
HIGHWAY SIGNS
"BRIGHT BY DAY — BRILLIANT BY NIGHT"

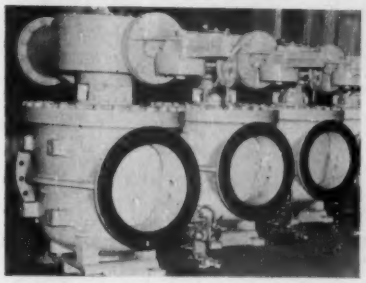
FOR THE BEST IN TRAFFIC SIGNS (heavy type)
ALUMINUM SIGNS REFLECTORIZED WITH SCOTCHLITE • EMBOSSED STEEL BAKED ENAMEL SIGNS
CHANNEL IRON SIGN POSTS IN STOCK
TRAFFIC CONES—IMMEDIATE SHIPMENT

See Our Listing in the 1954 Edition of The Municipal Index

Write Us for Complete Information

NITE-BRIGHT SIGN COMPANY
140 JAMES STREET, BRIDGEPORT 4, CONN.

Smith Rotovalves Control Israel Water System

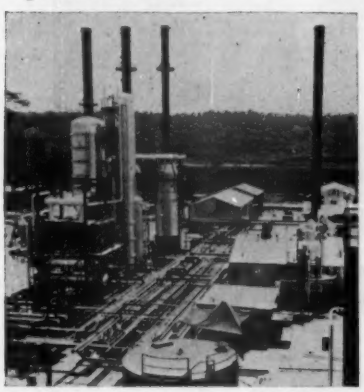


These units are part of a shipment of seven Rotovalves exported to Israel.

Seven 20-inch valves were exported to Israel recently via the Port of New York by the S. MORGAN SMITH CO., of YORK, PA. The units are cast iron, hydraulically operated Rotovalves, to be used in the pumping phase of the domestic water system in Tel Aviv. They will be installed complete with solenoid-actuated controls.

The company also reports a shipment of four 24-inch, cast-steel valves to Israel. All 11 units were made for the Meckoroth Water Co., Ltd., of Tel Aviv, and will be used as pump discharge check valves.

Asphalt Refinery Opened in Ohio



The new Columbia Park refinery will produce paving asphalts, cutbacks, emulsified asphalt and specialty products.

A new $4,000,000 asphalt refinery has been put into operation at Columbia Park, Ohio, by the American Bitumuls and Asphalt Co., reports C. W. Turner, president of the firm. It is located on the Ohio River near Cincinnati, and will refine and manufacture standard grades of asphaltic products for the Ohio, Kentucky, Michigan, and Indiana areas.

Plant facilities, according to Mr. Turner, include complete refining, storage, and shipping installations; an administrative building; and testing laboratories. The asphalt products processed and manufactured at the refinery will be used for paving streets, roads and highways, for airport runway construction, and for bituminous maintenance.

The refinery was formally opened on August 27th. Among the officials present at the dedication with Mr. Turner were T. S. Petersen, president of the Standard Oil Co. of California, the parent company of American Bitumuls, and P. L. Fahrney, vice-president of Standard and chairman of the board of American Bitumuls & Asphalt Co.

Floyd L. Reed, district manager of the company, is scheduled to make his headquarters at the new refinery. Main offices of American Bitumuls & Asphalt Co. are located at 200 Bush St., San Francisco 4, Calif.

Read how a Fairchild Aerial Survey can help sell your city as the right location!

Selection of a new plant site is no longer made by off-the-cuff decisions. Today's management men want facts—all the facts—on the availability of markets, labor, and raw materials—on rail, highway and water transportation, utilities, communications. Then they make their decisions.

A Fairchild Aerial Survey of your city puts this information right at your fingertips. Right in your city offices you can show your prospects your Fairchild Photomap—the highly accurate picture map that shows the city as a whole, with every landmark and cultural detail. Point out possible locations—explain their advantages—accessibility, highway and rail transportation, zoning, water supply, power lines, sewers, parking facilities, who their neighbors will be, and the 101 other things they want to know.

When your prospect's engineers want more engineering data, show them your Fairchild Contour Map—for accurate elevation, contour, drainage, and grade information.

Fairchild City maps are factual proof of the advantages your city offers. When you show them to your prospects, you show them also a city which is progressive, alert, and anxious to attract and help new business.

For more information, contact your nearest Fairchild office today!...or write for "Focusing on Facts," a 24-page, illustrated booklet, which explains the Fairchild techniques.

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How much is it costing you now to record a 4-page instrument—$1.40 or more? Compare this with the Recordak-Filmsort cost. You'll see how quickly a Recordak Microfilmer will pay for itself. You can buy one just right for recording deeds, mortgages, etc. for as little as $450; *or rent* one for as little as $17.50 per month. Anyone can operate it—make 16 or more photographically accurate and complete pictures per minute. You'll save hours in recording instruments every day.

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Recordak microfilm copies—inserted in Filmsort jackets—simplify handling and reference to recorded copies. You'll have them at your finger tips. You'll slice your filing space requirements by approximately 75% . . . eliminate the need for more and more shelving space.

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Recordak Corporation (Subsidiary of Eastman Kodak Company), 444 Madison Avenue, New York 22, N. Y.

Prices quoted are subject to change without notice.

New Recordak Supermatic Microfilmer

"Recordak" is a trade-mark

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming —and its application to government routines

Mexico City Increases Its Refuse Collection Fleet

Mexico City's sanitation officials were so well satisfied with the 30 Pak-Mor refuse collection trucks purchased last year, that the City recently added 100 new Pak-Mors to the fleet.

In the above photo, the President of the Republic of Mexico, Don Adolfo Ruiz Cortines (far left), is shown inspecting the new refuse collectors, which are lined up in Mexico City's principal square. At the President's right is Ernesto P. Uruchurtu, Mayor of Mexico City. They are accompanied by the Chief of the City's General Services Department, Lopez Palafox.

Portable Unit Drives Variety of Pipe Tools

A new portable power vise stand drives pipe threaders, die-stocks, pipe cutters and reamers. It is called the No. 432 "Lightweight Champ," and is designed for pipe ⅛- to 2 inches in diameter. When hooked up to a geared drive shaft, it may be used on pipe up to 8 inches in diameter.

When working with 8-inch pipe, the unit is hooked up to a geared drive shaft.

Aside from operating the various hand pipe tools, the "Lightweight Champ" may be used to turn up or back-off fittings, and is available with an attachment for bar twisting. Lightweight, it is designed with a powerful motor, and an unbreakable steel welded case.

Detailed information on this new portable power drive may be obtained by writing directly to THE OSTER MFG. CO., 2057 E. 61ST PL., CLEVELAND 3, OHIO, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 781.

"Clean Waters" Film Revised

A new version of "Clean Waters," the well-known film dealing with pollution of water resources, will be premiered by the General Electric Co. at the annual meeting of the Federation of Sewage and Industrial Wastes Association in Cincinnati, October 10-14.

This 25-minute, full-color, sound movie is designed to create an awareness to the growing of stream pollution, and to enlist the suport of public and industry for programs geared to meet the problem. It spells out the nationwide threat and prescribes the remedy: improved, expanded water supplies through more industrial waste treatment, modernized municipal sewage disposal plants, and the construction of municipal treatment facilities where none exist.

"Clean Waters" was produced by the Raphael G. Wolff Studios of Hollywood with the technical assistance of the U. S. Public Health Service. It was supervised by the General Electric Company's Program Unit in Schenectady, N. Y.

To emphasize the message of the film, camera crews of the Wolff Studios ranged from coast to coast in photographing the picture's dramatic scenes. In doing so they captured numerous striking examples of disease-breeding, polluted waters.

See how it's done—right in your office—with the sensationally different Kodak Verifax Printer, now distributed nationally by Recordak Corporation.

Your copies cost less than 4¢ apiece because you make them on non-sensitized paper; and you get 3 or more copies from each sheet of Verifax matrix paper.

You'll see at once how your savings in retyping costs alone will soon exceed the low purchase price of this truly remarkable copier—*only $240.*

Anyone in your office can make these photo-exact copies of letters, charts, news clippings, etc. And under normal room lighting, too.

Verifax copying saves wherever there's paper work

. . . see for yourself without the slightest obligation. Prompt service from anyone of Recordak's 29 offices

—MAIL COUPON TODAY—

Recordak Corporation
(Subsidiary of
Eastman Kodak Company)
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New York 22, N.Y.

Gentlemen: Please send free Verifax folder and address of nearest Recordak office.

R-25

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Company_____

Address_____

City_____ State_____

RECORDAK

Price quoted is subject to change without notice.

DELIVERS WATER CHEAPER

Philadelphia Dresser-Couples 2-mile steel main in expanding program of general waterworks improvement.

In adding to many miles of Dresser-Coupled steel mains laid since the War, Philadelphia engineers again recognized the outstanding advantages of this type of construction. These twin steel lines meet the needs of central and southern Philadelphia.

Dresser-Coupled steel mains are a sound investment. The beam strength of steel pipe, plus the non-rigidity of both pipe and couplings, assures a husky, flexible, permanently tight line. Glass-smooth linings sustain high carrying capacity. Dresser-Coupled installations fit in well with existing structures . . . are readily adaptable for future changes.

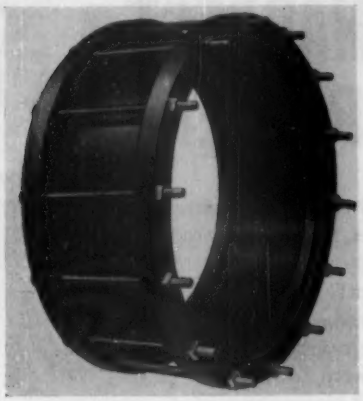
Actual installation is fast and relatively simple. Lighter weight steel pipe is easier to handle. Long pipe lengths mean fewer joints. Small crews, with a minimum of skill, supervision and heavy equipment, make joints faster, surer. The result—lower cost, maintenance-free lines.

✓ ***BE SURE*** **you get the *best* line at the *best* price. Always put steel pipe and Dresser Couplings in your specifications.**

DRESSER® COUPLINGS

Dresser Manufacturing Division, 69 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston, Texas; 101 S. Bayshore Highway, South San Francisco, California. Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco. In Canada: Toronto, Ont.

New Coupling for Water and Sewage Pipe



You don't need special expansion jointing to seal those large diameter pipe lines, according to R. H. BAKER & CO., 2070 E. SLAUSON AVE., HUNTINGTON PARK, CALIF. Easy-to-install Baker All-Steel couplings will do the job for you, providing large-diameter pipe with a bottle-tight seal.

The new Baker coupling has been designed for pipe with inside diameters ranging from 24 to 96 inches, and is suitable for use in water, sewage, and gas lines. To couple a string of pipe, the only tool that is required is a wrench, completely eliminating welding operations.

A formed middle ring, two rubber gaskets, two follower-flange rings and heavy bolts make up the AllSteel coupling. The gaskets are available in Lastite Rubber and Lastite Neoprene, and the middle rings may be obtained in a variety of thicknesses and lengths.

Detailed information on Baker All-Steel couplings may be obtained directly from the manufacturer, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 765.

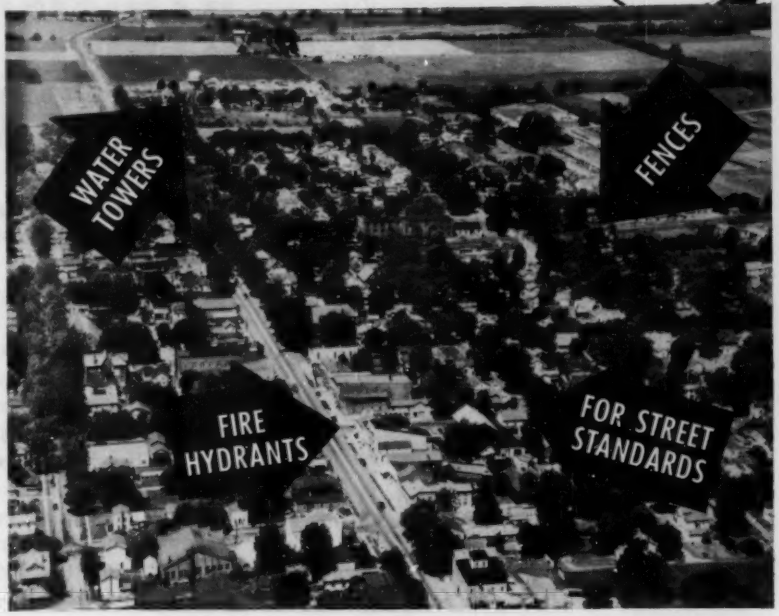
Flexible Plastic for Signs and Name Plates

Directional signs, name plates and labels that must be formed or bent before attaching, require a flexible, sandwich material that is also suitable for engraving, according to HERMES PLASTICS, INC., 13-19 UNIVERSITY PL., NEW YORK 3, N. Y. Such a material is Gravoflex, a new, laminated plastic that is easily bent by hand.

Signs made of Gravoflex may be en-

(*Continued on page* 241)

LONG LIFE · · · GOOD LOOKS



Subox & Subalox PAINTS

DEPENDABLY PREVENT RUST AND CORROSION

A SINGLE COAT of either Subox or Subalox, containing a rust-inhibitive pigment of lead-suboxide, is sufficient for easy and economical maintenance. The attractive appearance of these paints creates good public relations while their long life helps keep taxes to a level much appreciated by the local property owner.

WIRE MESH FENCES, once such a tedious paint job, also can be given this "new look" with a single coat of paint easily applied by floor brooms.

Not only does the SUBOX SYSTEM take care of these problems but it also solves many of the more complex maintenance problems encountered in water works or sewage engineering. Our technical staff will be glad to advise you on efficient rust protection for metal surfaces.

Subox Inc.

10 Fairmount Plant, Hackensack, N. J.

HOW TAYLORVILLE SOLVED ILLINOIS' HARDEST WATER PROBLEM

Since 1888, hardness of up to 974 ppm had wasted soap, left sticky curd on dishes and clothes, formed scale to clog pipes, *wreck* water heaters.

After World War II, geologists found one of the best well-field sites in central Illinois. Hardness was about 200 ppm, still far too high to satisfy taxpayers, far-sighted city officials.

So when well-field contracts were awarded, the project included a modern *water softening* plant. Consulting engineers recommended Permutit equipment.

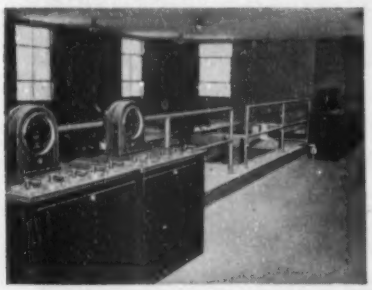
Taylorville's Precipitator (shown at left) reduces hardness, turbidity and alkalinity in a single, quick step. Its efficiency greatly reduces filter loads, cuts backwashing to a minimum.

This Permutit installation reduces hardness to the specified range of only 60-80 ppm (a mere 4 grains) . . . a far cry from Taylorville's old 974 ppm level!

Permutit equipment can bring similar benefits to *your* city. Write today for information. The Permutit Company, Dept. AC-10, 330 West 42nd St., New York 36, N. Y., or Permutit Company of Canada, Ltd., 6975 Jeanne Mance St., Montreal.

Taylorville's 1500 gpm Permutit Precipitator. It softens and clarifies in *half* the space, ¼th the time of a settling basin.

Permutit Filters and Operating Tables assure crystal-clear water. Monocrete® Underdrain has cast-concrete headers and laterals to reduce costs.



WATER CONDITIONING HEADQUARTERS FOR OVER 40 YEARS

PERMUTIT®

Taylorville's New Water Softening Plant
Consulting Engineers:
Warren & Van Praag, Inc., Decatur, Ill.
Contractor:
G. E. Tillman Co., Inc., Centralia, Ill.

(*Continued from page* 239)

graved, stamped or embossed, and won't break, scratch, stain or rust. Engraving is simple with any pantograph machine. The lettering is cut through the top layer and stands out permanently on a contrasting background. No painting is required.

The fabricating of Gravoflex is simple, too. The plastic can be cut with a scissors, paper cutter or metal shears, without beveling the edges. Nailing is accomplished without pre-drilling, and the material is easily stitched or stapled.

Sheets, strips or cut name plates of Gravoflex are available in a variety of thicknesses. Colors include a black surface and a white core, and a white surface with a red core.

For complete information, address the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 750.

Lektro-Park System "Stacks" Cars

There are two types of auto parkers to consider whenever there is congestion —the all-day parker who works in the congested area and the parker who comes to the congested area to transact business, shop or seek recreation. The short-time parker represents dollars-and-cents volume, which every business section needs.

Since land area is at a premium in most congested areas, the stacking system is suggested for parking the greatest number of cars in the least space. Such a method is Lektro-Park, a series of stalls erected to any feasible height, one or more towers which are actually hoists, and car cages with robot dollies that push and pull the car into or out of stalls.

For an 8-page booklet illustrating and describing this system, write LEKTRO-PARK CORP., 1645 S. 83RD ST., MILWAUKEE, WIS., or you may use the Post Card in this section. Circle No. 780.

New Dealerships

The HIGHWAY EQUIPMENT CO., INC, 616 D. AVENUE NORTHWEST, CEDAR RAPIDS, IA., recently appointed two new dealers for the firm's complete line of Hi-Way spreaders. They are the Stewart Equipment Co., Inc., Harrisburg, Pa., which will represent Highway Equipment in the eastern half of Pennsylvania and the southern half of New Jersey, and the Brinker Supply Co., Pittsburgh, Pa., scheduled to cover the Pittsburgh trade area and a number of counties in West Virginia and Maryland.

Included in the line of equipment to be carried by both dealers are the Model AS Bituminous, Concrete and Aggregate Spreader, the Model R Material Spreader, Model DD Tailgate Spreader, and the Model E and Model W truck-mounted Spreaders.

How Bennett Bilt WASTE RECEPTACLES reduce Fire Hazards!

Fire hazards are reduced by conveniently placing Bennett Bilt, self-closing, Waste Receptacles to receive waste paper and other trash. These enclosed Bennett Receptacles snuff out fires. Matches, cigarettes and other inflammable material thrown into open containers can start serious fires. That's why so many municipalities standardize on Bennett Receptacles . . . make cleanliness automatic, too.

Only BENNETT
WASTE RECEPTACLES
HAVE ALL THESE FEATURES

- Non-rusting stainless steel feet eliminate rusting and rust marks
- Made of extra heavy corrosion resistant steel
- All welded construction . . . reinforced corners
- Smooth exterior surface . . . nothing to catch and tear clothes
- Self-closing mechanism assures closed doors when not in use
- Round corners for structural strength and pleasing appearance
- Baked enamel finish . . . green, gray or white

These are a few of the many features that make Bennett Bilt Waste Receptacles a natural "buy". Quality and every consideration for hard usage are self-evident both inside and outside of these receptacles.

Fill in and Mail Coupon Today

THE BENNETT MANUFACTURING CO., ALDEN, N. Y., DEPT. AC 10-54

Kindly send to my personal attention a FREE copy of the fully illustrated Bennett Bilt Waste Receptacle Catalog.

Name _____

Organization _____

Street _____

City _____ State _____

PROTECTION ✓
EFFICIENCY ✓

for your

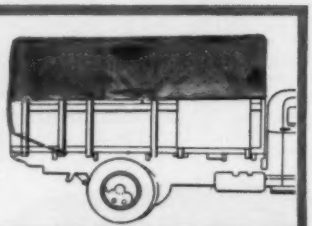
CITY

Shuredry

SALVAGE COVERS for your Fire Department

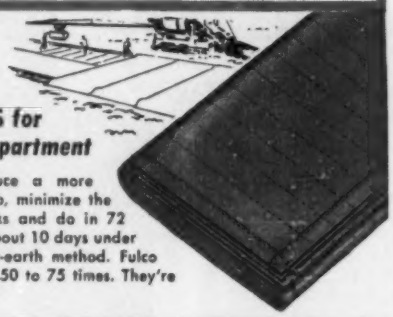
Cut water and smoke damage with SHUREDRY Green-Bak Salvage Covers — they're pressure impregnated by an exclusive Fulton dry-treatment process. All seams are waterproof. SHUREDRY Covers are light, pliable and easy to handle. Specify SHUREDRY — your Fire Equipment Dealer has them.

FULTON COVERS for your Sanitation Trucks

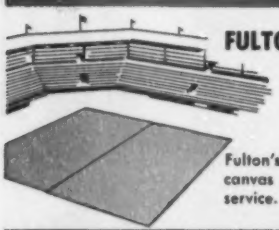


Fulton makes a complete line of top quality Tarpaulins and Truck covers in any size you need.

Fulco CONCRETE CURING MATS for your Road Department



Fulco Mats produce a more uniform paving job, minimize the possibility of cracks and do in 72 hours what took about 10 days under the wet-burlap-wet-earth method. Fulco Mats can be used 50 to 75 times. They're economical.



FULTON COVERS AND TARPS for your Softball Baseball and Football Fields

Fulton's special treatment of the heavy canvas duck, assures long, economical service.

Write your nearest Fulton branch for information and prices.

Fulton

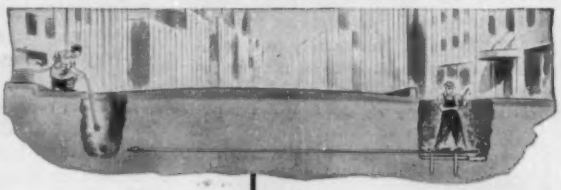
BAG & COTTON MILLS

ATLANTA • SAVANNAH • NEW ORLEANS • DALLAS • ST. LOUIS
DENVER • LOS ANGELES • KANSAS CITY, KANS. • MINNEAPOLIS
NEW YORK CITY • WINTER HAVEN, FLA. • SAN FRANCISCO
PHOENIX

Trojan Pipe Puller & Pusher

installs or renews pipe under pavement

in half the time required by any other machine!



MODEL A for ½" to 1" pipe

MODEL B for 2" pipe and under

PUSH PIPE fits all makes of pushers

Exclusive continuous action, which eliminates all resetting of grip, does the trick!

The Trojan combines pushing and pulling operations in one machine —keeps pipe continuously moving —lets you install 40' services in as little as 20 min.

Model A needs only 5' trench. One man can easily install the average service. 15 tons of pushing pressure possible.

Model B is reversible in 30 seconds—has 3 speeds for different soils. New dog with individual inserts cuts maintenance.

Write today for full details!

The TROJAN Manufacturing Co.

1113 Race Drive • Troy, Ohio

ANTHRAFILT

(Reg. U. S. Pat. Off.)

A Filter Medium For All Purposes

Has outstanding advantages over sand and quartz media:

1. Length of filter runs doubled
2. Only about one-half as much wash water required
3. Less coating, caking or balling with mud, lime iron or manganese
4. Filters out of service less because of shorter wash cycle
5. Better removal of bacteria, micro-organic matter, taste and odor
6. Increased filter output with better quality effluent
7. Not just the top portion, but the entire bed, aids in filtering
8. Can be used in all types of filters using a filter medium
9. A perfect supporting medium for synthetic resins
10. An ideal filter medium for industrial acid and alkaline solutions
11. Decidedly advantageous for removal of fibrous material as found in swimming pool filters

Additional information, recommendations and quotations furnished upon request by

PALMER FILTER EQUIPMENT COMPANY
822 E. 8th St. Erie, Pa.
Engineers and Sales Agents

REPRESENTING —

ANTHRACITE EQUIPMENT CORP.
Anthracite Institute Bldg., Wilkes-Barre, Pa.

New Fire Hood Protects Face and Head

A safety helmet has been built into this new fireman's hood, offering adequate protection not only against flames, heat, and smoke, but from falling objects as well.

The hood, made of aluminized asbestos, is completely fireproof, and has an aluminum surface that reflects over 80% of the heat away from the head and face. The adjustable hard safety hat is riveted into the top of the hood, along with an aluminum frame which holds the ¼-inch laminated safety glass window. This window measures 5- x 6¾-inches for maximum visibility.

Since the new hood weighs less than 4 pounds, a fireman can put it on easily, in seconds. Roomy, it permits him full freedom of movement, even when he is wearing breathing apparatus.

The new fireman's hood is made by the INDUSTRIAL SAFETY SPECIALTIES CO., PERKASIE, PA. For complete information, address the company directly, or take advantage of the Post Card on the colored page in this section. Circle No. 777.

Mobile Systems Into Base Stations

A new control unit enables two of Du Mont's three mobile systems, the 25-54 and 144-174 megacycle two-way radios, to be converted from battery to 117-volt a.c. operation for convenient base-station use. The unit is 14½ inches wide, 9-5/16 inches high, and 11 inches deep, and weighs about 10 pounds.

A palm-type microphone is used when transmitting or, optionally, a handset with hang-up box and transfer switch.

Standardization of the cabinet permits additional control units to be added in symmetrical banks as operations are expanded.

Optional features include a two-frequency receiver-transmitter switch, a foot switch for use with desk type microphone, a cyclometer clock for easy logging of transmissions, a tone oscillator and dialing assembly for selective calling, and a receiver-transmitter metering kit. Selective calling is also optional, at additional cost, and provides protection from unwanted signals from other base stations on the same frequency which do not pertain to the particular operation.

Further information may be obtained from the MOBILE COMMUNICATIONS DEPT., ALLEN B. DU MONT LABORATORIES, INC., 1500 MAIN AVE., CLIFTON, N. J., or you may use the Post Card on the colored page in this section. Circle No. 759.

●TENNANT Sweeper cleans 48" path; replaces 3 to 12-man crew.

New Compact Machine Sweeps Gutters Walks and Alleys at 1/5 Usual Cost

BY SWEEPING congested areas with a new type power sweeper instead of pushbrooms, Akron, Cleveland and several other cities may save up to 80% this year in labor costs.

The new sweeper, shown at the APWA meeting in New Orleans last fall, is a compact heavy-duty machine. It cleans a 48" path and turns easily in a 5-ft. radius.

Its sweeping capacity is reported to equal that of a 3 to 12-man pushbroom crew.

Sweeps Cleaner Than a Crew

The sweeper has a powerful brush-and-vacuum system which eliminates need for water spraying or "wetting down." A rotating curb-brush sweeps leaves, dust and litter into main path of the machine.

A 36" brush, in a vacuumized compartment, throws dirt forward into an enclosed 9 cu. ft. hopper. Sweeping speed, with 2-speed transmission, is 1½ to 8 MPH.

Pays For Itself In 6 Months

The new sweeper has proved most successful in "mechanizing" whitewing work in special congested areas where big sweepers can't be used—such as gutters in downtown areas, walks, alleys, garages, driveways, etc.

In such areas a single machine is said to pay for itself in 1 to 6 months.

Air terminals, auditoriums, piers and parking lots also can be swept most economically this way.

For details, please write or wire to the G. H. TENNANT CO., 2520 N. 2nd St., Minneapolis 11, Minnesota.

UNDERWOOD SUNDSTRANDS
in
Santa Cruz, California

Water Department

The Perfect Combination

"STUB" Billing with UNDERWOOD SUNDSTRAND

The City of Santa Cruz uses UNDERWOOD SUNDSTRAND FOR WATER BILLING. This versatile machine prepares a remarkably complete stub and bill showing:

CONSUMPTION • WATER CHARGES • GARBAGE REMOVAL CHARGES
SEWER RENTAL • ARREARS • CREDITS and TOTAL CHARGES

and as an automatic by-product of the billing operation it automatically accumulates totals for each item as well as the grand total of consumer billing.

Let us send you further information.

UNDERWOOD CORPORATION

Accounting Machines . . . Typewriters . . . Adding Machines . . . Ribbons, Carbon Papers and other Supplies
Punched Card Equipment . . . Electronic Computers

One Park Avenue UNDERWOOD **New York 16, N. Y.**

Sales and Service Everywhere

Salamanders Burn Longer

The new "35" Cylinder is featured here with a No. 305 T-Cylinder Connector and two 12½-foot lengths of extension hose, attached to a No. 1210 floor type furnace and a No. 4 Insto-Gas torch.

Mounted on these new, large capacity cylinders, Insto-Gas salamanders, jumbo furnaces and large torches burn longer, increasing their usefulness to waterworks crews when melting jointing material for laying bell-and-spigot pipe.

The "35" Cylinder is designed of high-tensile steel and weighs only 70 pounds when filled. It features a wide base with curled footring for maximum stability, and can easily operate two pieces of equipment at the same time.

Aside from the new "35" Cylinder, the Insto-Gas Corp., offers portable heat in 18- and 5-pound capacities. For complete information, write the INSTO-GAS CORP., 1977 E. WOODBRIDGE, DETROIT 7, MICH., or use the Post Card on the colored page in this section. Circle No. 775.

Low-Cost Swimming Pool Chlorinator

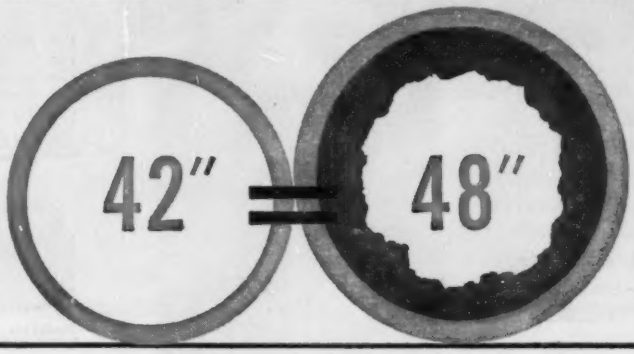
Available for use in any of your city's swimming pools, this new solution feed, vacuum type unit offers dependable chlorination at less cost than is possible with hypochlorination equipment, according to the Fischer & Porter Co., Hatboro, Pa.

The F-P chlorinator requires none of the accessories necessary for hypochlorite treatment, and uses inexpensive pure chlorine as a source of active chlorine. A turn of a knob regulates the solution-feed unit to the desired flow rate. Moreover, this chlorine flow rate is easily read from the front of the cabinet.

The chlorinator can be kept well supplied with chlorine with only infrequent changing of chlorine cylinders; a distinct advantage over the mess caused by repeated batches of hypochlorite solution. In case of any loss in the chlorinator's operating vacuum, the unit offers complete shut-off of gas.

Constructed of corrosion-resistant material, the swimming pool chlorinator is made in five flow capacities from 0.5 to 100 PPD, with each range averaging from 20 to 1. If your flow range exceeds

(*Continued on page* 247)



When 42" is as big as 48" you need... National

Yes, it's true!

Even a small amount of incrustation will reduce the carrying capacity of a 48" main to that of a clean 42" main.

The more your mains are clogged, the less capacity they have and the resulting reduced pressures increase pumping costs and fire hazard.

Take the easy way out—call National. Then, if your mains need cleaning we'll do the job quickly and effectively with little or no interruption in service.

Why not let our engineers find out what condition your water mains are in?

There's no obligation!

NATIONAL WATER MAIN CLEANING COMPANY
50 Church Street · New York, N. Y.

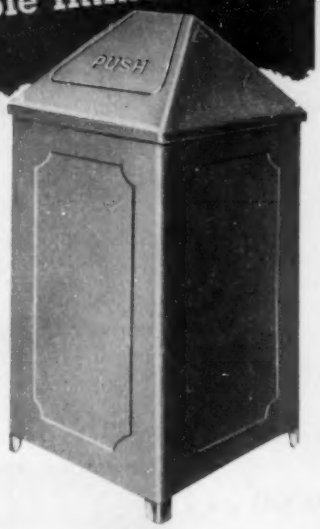
36

ATLANTA, GA., 333 Candler Building • BERKELEY, CALIF, 905 Grayson Street • DECATUR, GA., P. O. Box 385 • BOSTON, MASS., 115 Peterboro Street • CHICAGO, 122 So. Michigan Avenue • ERIE, PA., 439 E. 6th Street • FLANDREAU, S. D., 315 N. Crescent Street • KANSAS CITY, MO., 406 Merchandise Mart and 2201 Grand Avenue • LITTLE FALLS, N. J., Box 91 • LOS ANGELES, 5075 Santa Fe Avenue • MINNEAPOLIS, MINN., 200 Lumber Exchange Building • RICHMOND, VA., 210 E. Franklin Street • SALT LAKE CITY, 149-151 W. Second South Street • SIGNAL MOUNTAIN, TENNESSEE, 204 Slayton Street • MONTREAL, CANADA, 2032 Union Avenue • WINNIPEG, CANADA, 576 Wall Street • HAVANA, CUBA, Lawrence H. Daniels, P. O. Box 531 • SAN JUAN, PUERTO RICO, Luis F. Caratini, Apartado 2184.

SOLAR

A seasoned and capable addition to your clean-up staff. Will work three eight-hour shifts daily to assure increased safety and sanitation.

Available Immediately!



Solar Self-Closing Waste Receptacles have *all* the qualifications you demand. Solar is the *original* waste receptacle with only one moving part — the free-swinging top. Solar has no springs, weights, or hinges.

Solar Features

- Withstands tough usage
- Cuts overhead
- Cuts cleaning costs
- Cuts plumbing expenses
- Reduces fire hazard
- Quiet in operation
- Safe to use

Solar Self-Closing Waste Receptacle

... the original and still the Best

SOLAR-STURGES MFG. DIV.
PRESSED STEEL CAR COMPANY, INC.
MELROSE PARK, ILLINOIS DEPT. D-10

Please send me complete information about the new line of Solar Self-Closing Waste Receptacles.

NAME_____
FIRM NAME_____
ADDRESS_____
CITY_____ ZONE____ STATE____

SOLAR-STURGES MFG. DIV. Pressed Steel Car Company, Inc.

Big Beam

AUTOMATIC EMERGENCY LIGHTS

GUARD AGAINST THE HAZARDS OF SUDDEN BLACKOUTS

Big Beam Model 2ATW with storage battery and built-in charger that keeps battery fully charged at all times. Variety of models to choose from.

Sudden blackouts breed confusion, panic, property damage, bodily injury — even loss of life. You can have completely dependable protection against sudden blackouts by installing Big Beam automatic emergency lights. (Plug into any convenient lighting outlet.) Then whenever regular lights fail, your Big Beam will provide hours of bright, safe illumination.

Big Beam PORTABLE ELECTRIC HAND LAMPS

Model No. 211
1500-Foot Beam

Model No. 166 with
SEALED BEAM Bulb

Model No. 408F
Flare and Lantern

Write for Complete Information —

U-C LITE MFG. CO., 1063 W. Hubbard St., Chicago 22, Ill.

IN CANADA: Bernard Marks & Co. Ltd., 459 Church St., Toronto 5, Ont.

QUESTIONS ANSWERED about TREE STUMPS

1. **Can stumps be removed between curb and sidewalk?**
2. **How can they be disposed of after cutting?**
3. **What is the most economical way of removal?**

ANSWERS: The newly developed O'Brien Stump Cutter, due to its great mobility, can safely remove stumps any place, even between curbing and sidewalk. It completely cuts the stump to desired depth below ground level, eliminating the need to haul the stump away. And . . . the O'Brien Cutter reduces removal costs to about one third the original man hour costs.

Write to exclusive manufacturer and sales agent today.

Metal Parts Machining Corp.
WATERVLIET NEW YORK

(*Continued from page* 245)

the normal 20 to 1 range, there are additional metering tubes and float combinations which are readily interchangeable.

Further data on the F & P chlorinator and how it operates, are available from the FISCHER & PORTER CO., 5484 FISCHER RD., HATBORO, PA., or you may use the Post Card on the colored page in this section. Circle 772.

Plastix Reflective Markers

A new plastic disc impregnated with thousands of highly reflective glass spheres, is now offered for airports, highways, streets, school crosswalks, and parking areas.

These Plastix discs were developed by the PRISMO SAFETY CORP., HUNTINGDON, PA. To install, simply apply an adhesive to the Plastix, apply adhesive to the pavement, press Plastix into place, roll down and traffic is ready to roll.

For additional data, write the manufacturer directly, or you may use the Post Card on the colored page in this section. Circle No. 742.

Portable Air Compressor

Model 55, an economical air compressor designed to operate heavy breakers and light rock drills is available from the P. K. LINDSAY CO., 97 TILESTON ST., EVERETT 49, MASS. A portable unit, it is powered by an air-cooled, 4-cylinder Wisconsin VF4D gasoline engine, and

features a tool box with adequate storage space for tools and accessories.

Municipalities can use the Model 55 for digging, spray painting, rock drilling and sandblasting. The unit will run a paving breaker in the 60-pound class, operate a pump for the application of heavy fibrated waterproofing, maintain full pressure when operating a rotating rock drill in the 30-pound class, and operate a sandblast with 3/16-inch nozzles.

Detailed information on Lindsay portable compressors is available directly from the manufacturer, or take advantage of the Post Card on the colored page in this section. Circle No. 744.

Destroy flies, mosquitoes, and other pests with *IRON AGE* Mist Sprayers

For a healthier community . . . for a more comfortable community . . . Iron Age Mist Sprayers are a *must* for community insect control! Parks, playgrounds, golf courses, swamp areas are completely protected *for long periods of time* because Iron Age Mist Sprayers have a lasting kill.

Iron Age Model 125 EAP (shown above) delivers up to 11,000 cubic feet of air per minute at 90 to 125 miles per hour. Axial flow fan operates at 87% efficiency. Pump has drive gears completely enclosed . . . handles all solutions that dissolve or emulsify. Special pump (available as optional equipment) handles solutions remaining in suspension. Find out how Iron Age Mist Sprayers can make your pest control program far more effective at less cost. Mail coupon below for details—no obligation.

Iron Age Mist Sprayers give you these advantages:

- Greater community health and comfort
- Superior control of flies and mosquitoes
- Efficient use of power, material, equipment
- Choice of pumps for different solutions

OLIVER

IRON AGE

Finest in Farm Machinery

MAIL TODAY FOR FREE INFORMATION

THE OLIVER CORPORATION, Dept. 36, 400 W. Madison St., Chicago 6, Ill. AC-3

Gentlemen:

☐ Please send me information on Iron Age Mist Sprayers

Name.....

Title.....

Address.....

City..... Zone..... State.....

LEFT TO RIGHT

Superintendent of Streets Smedberg, City Manager Johnson, Commissioner of Public Works Rose inspect the operation of an Asplundh portable wood chipper, which disposes of brush in Evanston's streets and parks.

Inset — Edward W. Smedberg

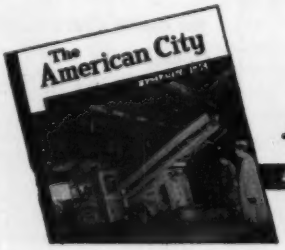
How The City Of Evanston Buys Municipal Equipment

BEFORE equipment is bought by city and town governments, a number of officials must give their approval. Evanston, Illinois (population 73,641), is no exception. When Mr. Edward W. Smedberg, Superintendent of Streets, wants to buy, he makes a recommendation to Commissioner of Public Works Joseph L. Rose. If Mr. Rose approves, he in turn passes the recommendation on to City Manager Bert Johnson. Then Mr. Johnson must agree to the purchase and present it to the Mayor and City Council for final okay.

Mr. Smedberg writes, "I find the editorial material in THE AMERICAN CITY particularly useful in learning how important problems are met by officials in other municipalities. This information enables our own city to approach similar problems in a prompt and efficient manner. On more than one occasion your publication has directly influenced the purchase of equipment by my department."

Purchasing for other departments follows the same pattern. Wherever the buying power is, THE AMERICAN CITY covers it, with subscriptions for not only Messrs. Smedberg, Rose, and Johnson, but also the City Engineer, Water Works Superintendent, Parks Superintendent, Traffic Engineer, and the Mayor. These men will see your sales message if you invest your advertising dollars in THE AMERICAN CITY.

The American City | Contractors and Engineers | The School Executive



The American City

470 Fourth Avenue, New York 16, N.Y.

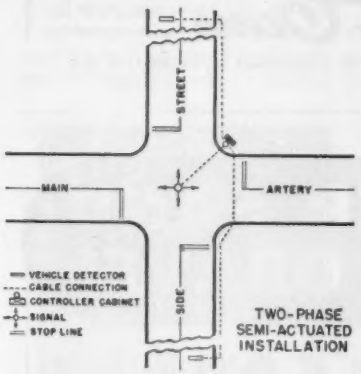
New Transformer Guard

A simple transformer, *Squirrel Guard*, is designed to overcome trouble caused by birds and animals creating outages.

Shaped like a funnel, the guard is formed of wet-process porcelain, brown glazed, and fits over any type of transformer bushing. It about doubles the distance from hot to grounded parts, minimizing the danger of birds or animals shorting out the bushing.

The new "Squirrel Guard" is made by HUBBARD AND CO., PITTSBURGH, PA. For a full description, write the company directly, or you may use the Post Card on the colored page in this section. Circle No. 764.

Time Is Money Where Two Streets Cross



The crux of the problem imposed by the ever-growing mass of vehicles let loose on our streets is the intersection which must carry the traffic loads of converging streets. It is here that roadblocks must be prevented.

The efficiency of an intersection is indicated by the amount of waiting. If there is no waiting by the cars on either street, the efficiency is 100%. To attain it, the *actual demands* of traffic must be met as they develop. Electro-Matic controls sense the fluctuations in traffic flow and apportion the green light accordingly. This is in sharp contrast to fixed or pre-set timing.

The variety of intersection types in today's traffic pattern demand control apparatus having flexibility. Despite superhighways with grade separations and urban freeways around the business district, the problem of the intersection grows daily more severe. The Automatic Signal organization that has been responsible for traffic-actuated control, offers a bound collection of bulletins presenting the equipment of this field of growing importance to the cities.

The bulletins not only describe the unit but its function and its place in the traffic control picture as well. The first is a pedestrian-actuated controller for mid-block as well as intersections. Next is the Traff-O-Matic controller for isolated intersections. The third step is a controller for full actuation as well as for service at outlying intersections. Other controllers are for special situations, such as for intersections subject to high approach speeds.

At intersections where it is essential that right-of-way be apportioned efficiently, the volume-density controller is indicated. The principle of volume-

(*Continued on page* 251)

I LIKE A FOOLPROOF DESIGN— GIVE ME MATHEWS
AND DON'T FORGET YOU CAN REPLACE A BROKEN MATHEWS WITH A NEW BARREL IN A FEW MINUTES
MATHEWS ARE TOPS FOR EFFICIENCY IN SERVICE
FD

MATHEWS Means Dependable Hydrants

LONG LIFE. Mathews Hydrants have bronze parts at critical points—corrosion, rust and wear are thoroughly licked.

TROUBLE-FREE. The stuffing box plate, cast integral with the nozzle section, provides a positively leak-proof construction — water, sediment and ice cannot interfere with operating thread.

LOW-COST MAINTENANCE. Only one point requires lubrication—and that only during routine inspections.

REPLACEABILITY. A Mathews leveled in an accident can be replaced without excavating and in a jiffy. Community fire protection is interrupted only for a few minutes.

The Mathews includes every quality feature . . .

Compression type valve to prevent flooding • Head turns 360° simply by loosening bolts • Replaceable head • Nozzle sections easily changed • Nozzle level can be raised or lowered without excavation • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • A modern barrel makes an old Mathews good as new • Mechanical-joint pipe connections as needed

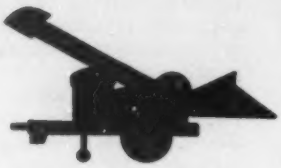
MATHEWS HYDRANTS

Made by R. D. Wood Company

Public Ledger Building, Independence Square, Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

SAFETY IS IMPORTANT



The basic design of the Asplundh Chipper; its built-in ruggedness, and extra features such as the tapered blades, make it safe to operate.

For complete details, write to us at 507 York Road, Jenkintown, Pa.

ASPLUNDH CHIPPER CO.

Buy the can that's
GUARANTEED ...Witt!

WITT CANS are guaranteed to outlast 3 to 5 ordinary Cans. WITT dares to make that guarantee, because WITT CANS are designed to last longer . . . constructed to give years of rugged service. That's why WITT CANS survive severe treatment that soon wrecks ordinary cans. Compare WITT CAN features with those of other Cans on these points:

- *Straight sides*
- *Deep rolling corrugations*
- *Sturdy lid*
- *Heavy gauge steel*
- *Structural steel bands*
- *Hot dip galvanizing*
- *Pinch-proof handles*

You'll see why WITT CANS are guaranteed to outlast 3 to 5 ordinary Cans . . . why, regardless of price, WITT CANS are your best buy!

WITT CANS HAVE THE "RIGHT" ANGLE

Witt Cans *"Originators of the Corrugated Can"*

THE WITT CORNICE CO. 2139 WINCHELL ST., CINCINNATI 14, OHIO

minor incident or... MAJOR CATASTROPHE?

Light and power can make the difference! There's less chance for hysteria, accidents and loss of life when audiences, patients and residents in public or private buildings can see to move about freely.

That's why in hundreds of hospitals, schools, public and private institutions, hotels, theaters and other buildings you'll find *Fairbanks-Morse stand-by power generating sets.*

These dependable power producers go on *automatically* the instant that city or high line power is cut off.

Models for installation in large buildings—one or more units—start at 10,000 watts, ranging upward to 40,000 watts. Smaller units also are available for police and fire department uses.

Send for free 20-page catalog. Address Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE

a name worth remembering when you want the best

WATER SYSTEMS • GENERATING SETS • MOWERS • HAMMER MILLS
MAGNETOS • PUMPS • MOTORS • SCALES • DIESEL LOCOMOTIVES & ENGINES

FILTER SAND AND GRAVEL

Produced from an inland pit hence free from river contamination and foreign matter.

Shipment in bulk or bagged.

Many of the larger filter plants throughout the United States are equipped with our products.

PROMPT SHIPMENT

Inquiries and orders solicited.

NORTHERN GRAVEL COMPANY
Muscatine, Iowa
P. O. Box No. 307 Phone: 4261

(*Continued from page* 249)

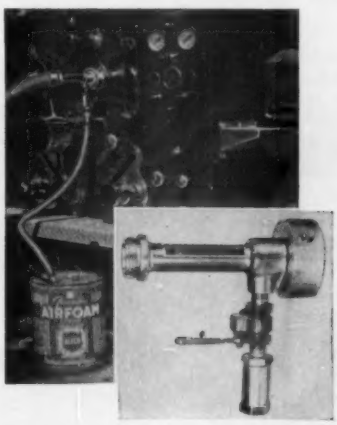
density control is the continual balancing of demand on the street having the green light against the counter demand that is building up on the street having the red light. Any of these bulletins may be obtained separately by stating your problem.

For a working understanding of "Traffic Actuated Control," write for the catalog of that title to the AUTOMATIC SIGNAL DIVISION, NORWALK, CONN., or you may use the Post Card on the colored page in this section. Circle No. 747.

New Proportioner Fights All Types of Fires

Attached to the 2½-inch discharge gate of a pumper, this new fire-fighting device quickly produces Airfoam for extinguishing gasoline, oil or grease fires. Called the Proportioner, it is designed to draft 6% Airfoam solution, or by use of an adapter, will draft 3% solution.

A wetter water metering device is a separate part of the Proportioner, and has two positions, one for drafting wet-



ter water solution for extinguishing ordinary combustible type fires, and one for drafting Airfoam liquid for the flammable liquid fires. It may be switched from one position to the other in seconds.

The new device produces up to 600 gallons of Airfoam per minute. It has a wide operating pressure range on the inlet side of the Proportioner from 200 to 300 psi.

The Proportioner is made by the AMERICAN - LAFRANCE - FOAMITE CORP., ELMIRA, N. Y. Request literature directly from the company, or you may use the Post Card on the colored page in this section. Circle No. 761.

To enforce this...

you need **CYCLONE FENCE!**

One of the most vital services every city must offer its citizens is a pure and adequate water supply. And, next in importance to filtering equipment and high-powered pumps in a first-class water plant, is good fencing. Fence that is high enough, strong enough to keep out dangerous vandals as well as thoughtless trespassers and adventuring children. The one fence that best meets those requirements is Cyclone Fence.

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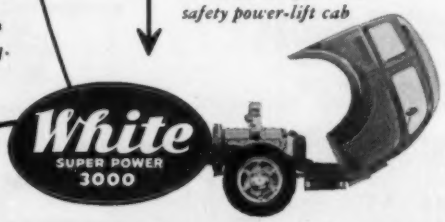

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About People

Henry W. Foulds, president of **The Permutit Co.,** New York City, manufacturers of ion exchange resins and water conditioning equipment for industry and home, announces the appointment of A. McLean Freeman as advertising manager. Mr. Freeman comes to Permutit from the Chemical Division of The Borden Co. where, for the past 13 years, he headed the division's advertising department. New assistant advertising manager for Permutit is William Renner Feik.

A. M. Freeman

A new consulting practice in sanitary engineering has been opened by William T. Ingram, adjunct professor at New York University's College of Engineering. Mr. Ingram's home office will be located at 20 Point Crescent, Whitestone 57, N. Y.; laboratory office, South Shore Laboratories, 148 Islip Ave., Islip, L. I., N. Y.

Another New York consulting sanitary engineer, Sol Pincus, has been invited to take part in the International Congress on the Underdeveloped Areas to be held in Milan, Oct. 10-16. A former member of the World Health Organization, Mr. Pincus will conclude his trip abroad with visits to various public health and engineering workers in Western Europe.

A recent meeting of the board of directors of **Peter Pirsch & Sons Co.,** Kenosha, Wis., resulted in the election of three new corporate officers. They are William R. Pirsch, president and treasurer; D. N. Even, vice-president; and C. P. Evan, secretary.

When B. F. Whitbread takes over as product sales manager for **Gar Wood Industries, Inc.,** Wayne, Mich., he will direct a concentrated sales effort for a new line of hydraulic hoists and dump bodies, reports E. B. Hill, vice-president of sales. Mr. Whitbread has been with the company for almost 20 years, last serving as manager of Gar Wood's direct factory truck equipment sales branch in Los Angeles. Ross Miller is the new sales manager for St. Paul Hydraulic Hoist, a subsidiary of Gar Wood located in Matton, Ill. Mr. Miller is former vice-president and general manager of the National Lift Co.

B. F. Whitbread

Scheduled to manage New England district sales for the **Gamewell Co.,** Newton Upper Falls, Mass., is Charles T. Smith, formerly in charge of the company's Eastern Massachusetts and Rhode Island territories. Mr. Smith will be assisted by six sales engineers, including Everett L. Angier, Chester W. Miles, Russell A. Glenn, E. Hoyt Young, George O'Brien, and Hawley Thomas.

Joe A. Wicke has been appointed advertising manager of the **Iowa Mfg. Co.,** Cedar Rapids, Ia., according to Kenneth Lindsay, executive vice-president and director of sales and advertising for the firm. Mr. Wicke joined the company in 1942, last serving as assistant advertising manager. Succeeding him in this position is William E. Yount, Jr.

New developments at the **General Electric Co.,** Syracuse, N. Y., include the appointment of James D. Helm as sales manager for mobile communication equipment and special accounts, and that of Richard C. Sundstrom as sales specialist for transportation communication equipment. The announcement was made by L. Robert Sheeley, manager of sales for G-E communication equipment.

From the **Toro Mfg. Corp.,** Minneapolis, Minn., comes news of a new advertising and sales promotion manager for the firm. He is H. R. Johnston, Jr., formerly Toro's account executive in the Minneapolis office of Batten, Barton, Durstine & Osborn. Mr. Johnston succeeds B. G. Reemelin, who resigned recently to become a distributor for the company.

Newest addition to the engineering staff of **Metcalf & Eddy,** consulting engineers, Boston, Mass., is George C. Wallace, former member of the Department of Public Works, City and County of Honolulu, T.H. Mr. Wallace served the Hawaiian department as an engineer in the sewer division.

T. O. Liebscher, president of the **Le Roi Co.,** Milwaukee, Wis., announces the appointment of Jack E. Heuser as vice-president in charge of sales. Mr. Heuser will have charge of the organization and management of a newly created sales division which will sell and service all Le Roi products. A new sales manager, James R. Harwood, has been appointed for the company's Transo Division.

When W. A. Phillis retires as president of **Beaver Pipe Tools, Inc.,** in the near future, he will be succeeded by Charles T. Everett. Mr. Everett is executive vice-president and general manager of the 54-year-old firm. Main offices of Beaver Pipe Tools are in Warren, Ohio.

News from **Hubbard & Co.,** well-known manufacturers of aluminum street lighting standards and brackets, informs us of the recent appointment of three new vice-presidents. Howard Jackson is the firm's new vice-president in charge of production; Charles S. Kernaghan is vice-president in charge of merchandising and assistant to the president; and Richard G. Robbins is vice-president and general sales manager. Both Mr. Jackson and Mr. Robbins will confine their operations to the firm's Pittsburgh and Chicago plants. Hubbard also reports the appointment of a new works manager, Alton R. Smith, and new assistant works manager, John Winke, for its Chicago plant.

Howard Jackson

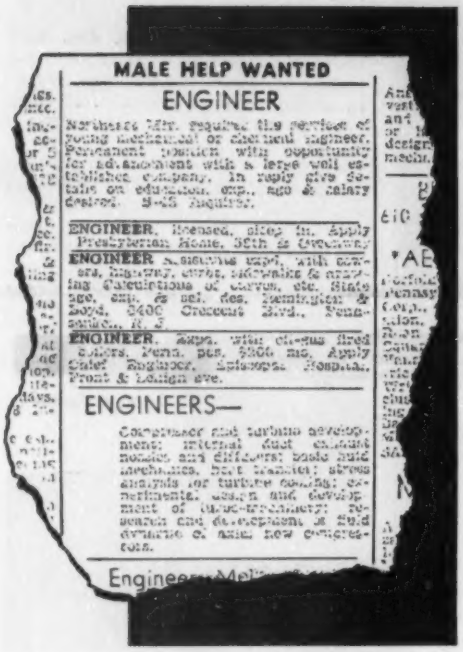
Charles Kernaghan

Richard Robbins

Heading a number of personnel changes in the **Chicago Bridge & Iron Co.,** Chicago, Ill., is the election of Fred L. Goldsby as a vice-president. Mr. Goldsby is general sales manager for the firm. George E. Borst, former manager of the Philadelphia sales office, has been chosen to head the company's New York sales office. He will be succeeded in Philadelphia by Lucian J. Harris.

Wallace T. Miller has joined the staff of the **Cast Iron Pipe Research Association,** Chicago, Ill., according to Thomas F. Wolfe, managing director of the Association. Mr. Miller was formerly general manager of the Rochester Division of the New York Water Service Corp.

The Mobile Communications Department of **Allen B. Du Mont Laboratories, Inc.,** Clifton, N. J., has expanded its sales activities to cover the northeastern Oklahoma area, reports C. J. Harrison, sales manager of the department. New Du Mont sales and service representative in this area is C. S. Perreault of Bud Perreault Electronics, Inc., Tulsa. Mr. Perreault will supervise the sale, installation and service of the company's 2-way mobile radio communications systems.



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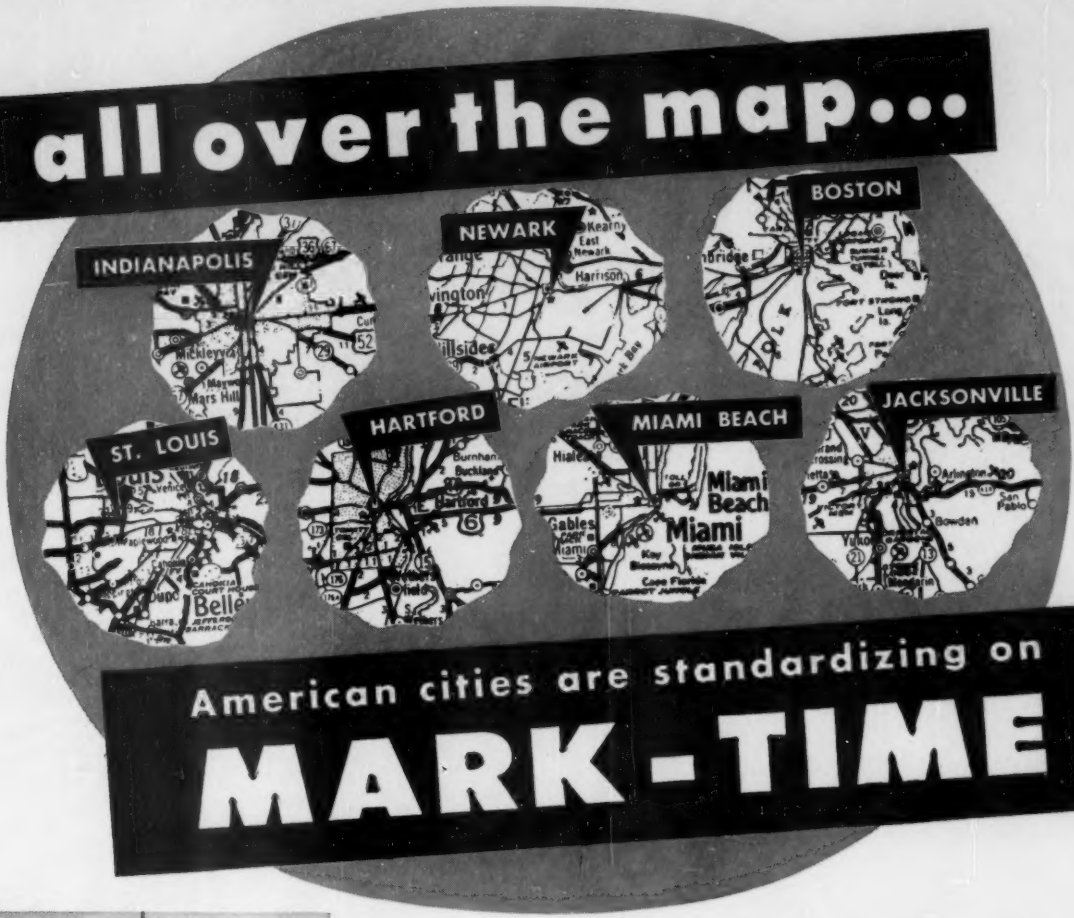

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